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### ACUTE PANCREATITIS\*

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THIS paper is concerned only with the clinical side of acute pancreatitis and is based on a study of 18 cases treated at the Worcester Hospital. Six were on my own service and the privilege of studying the others I am indebted to the other members of the Surgical Staff. All of these cases were operated the method being essentially the same in all and consisting in drainage of the lesser cavity by one another route together with drainage of the gall-bladder in three of the four cases associated with cholelithiasis. Ten of the series died. The etiology in one case seems to have been traumatic. At any rate it followed definite trauma to the upper abdomen. I shall not take the discussion of the etiology in general. The diagnosis is a great stumbling block. Though Sir Berkeley Moynihan in his book on abdominal operations expresses himself as being unable to understand why this should be so. He gives a very graphic and very complete description of the symptoms and after reading it you will agree with him that the diagnosis should be easy. Indeed when I read the history and the report of the local examination in most of the cases included in this paper I wonder why we did not make the diagnosis. When the case is before you, however, it is not easy. The differential diagnosis depends largely on a difference in degree rather than in kind of symptoms. The pain is more excruciating than that of gall stones, of perforated ulcer, the vomiting is less profuse than in intestinal obstruction, the prostration is more profound than in any of the things which are likely to be confused with and the rigidity less board-like than in perforated ulcer. To make these distinctions and interpret them correctly requires experience and the average surgeon who is likely to see only one or two cases a year is bound to have difficulty in making a positive preoperative diagnosis in all but the very rare cases where of course the symptoms are more typical. The cyanosis described by Halsted I have never seen and I have not tried the renalin test.

I have no doubt, however, if we keep it in mind as a possibility in acute upper abdominal conditions we will make the diagnosis oftener than we have in the past. In our cases a positive preoperative diagnosis was made in four. In four others it was put down as an alternative. The other diagnoses were,—

Surgical abdomen 2  
Rupture of viscus 2  
Appendicitis 2  
Upper abdominal tumor 1  
Intestinal obstruction 1  
Cholecystitis-Pancreatitis 1  
Stone in common duct or Pancreatitis 1  
Perforated duodenal ulcer or Pancreatitis 2  
Acute abdominal crisis 1  
Cholelithiasis 1

According to the classification of Fitz in 1889 which still obtains, Acute Pancreatitis occurs in three forms: hemorrhagic, gangrenous and suppurative. These are really stages of the same process occurring in the order named. All of the cases I am reporting were of the hemorrhagic type except case VI which I diagnosed at the time of operation as a hemorrhagic cyst. In the light of its later development and of the autopsy findings it appears that we had a case which went through all three stages under our eyes (Read Case VI here).

(Read Case I.) In view of the continuance of the attacks after operation may it not be open to question as to whether she would not have recovered without operation?

Case III is interesting because of its possible etiology. It is important to know whether there had been previous symptoms, but this does not appear in the history.

#### TREATMENT

It seems apparent that the symptoms of this disease, except the pain, are due to an overwhelming toxæmia. The rational treatment then should be to relieve the system of the toxic product, and to remove the cause of its production. It is almost universally agreed that the best we can do toward the first requirement is to drain the pancreas, and in the actual practice of most surgeons this is all that is done.

If there are stones in the gall-bladder or if it



is definitely diseased and the condition of the patient will allow it, the gall-bladder is drained or removed, the common duct is relieved of stones and perhaps drained, a stone in the ampulla of Vater would be removed. These measures are more directly aimed at the cause.

The approach to the pancreas is through the gastrohepatic omentum, the gastrocolic omentum, the transverse mesocolon or very rarely through the back. It is advised by most authorities that the capsule be incised and by some that the gland tissue be penetrated. In my own cases with one exception, it seemed to me evident from the bloody fluid that the capsule was already ruptured and that further cutting or tearing was unnecessary and perhaps would be harmful.

In only three of all our cases was the capsule incised, and in one torn through by the finger. Three of these cases were among those who died. I do not find that it is very often possible to see the pancreas. It is obscured by the bloody fluid which cannot be wiped away and I must content myself with what I can learn as to its condition by the sense of touch. I find in our records it is described as hard, swollen or soft. Of the six swollen ones three recovered and three died, of the hard three recovered, none died and of the soft, one recovered and five died, these were apparently the more toxic cases.

Cigarette drains were used in all of our cases except in the second operation on one of them where rubber tubes were used. The drainage was through the gastrohepatic omentum in eight, the gastrocolic omentum in five, the transverse mesocolon in one, foramen of Winslow three, and common duct one.

Of those drained through the gastrohepatic omentum (eight) only one recovered, those drained through the gastrocolic (five) all recovered, through the foramen of Winslow, one recovered and two died. The one drained through the common duct recovered. The duct was occluded by a stone which was removed.

The gall-bladder was drained in addition to the other drainage in three. Two of these died. The inference would seem to be that the drainage is more efficient by way of the gastrocolic omentum. I cannot see, however, why it should be so much better than that by way of the gastrohepatic.

I am sure that drainage through the foramen of Winslow is unsafe because of the uncertainty of the drain staying in place.

The time elapsed between the onset of the last attack and operation was about the same in those who recovered and those who died, in those who recovered the shortest time was twelve hours, the longest ten days and the average 3.6 days. In those who died the shortest time was three hours, the longest time three weeks and the average four days. I am unable to make any deduction from these cases as to when is the most favorable time to operate. In one case which had progressed fairly well for three days, operation seemed to precipitate acute symptoms from

which she died. Another case had been sick three days and entered the hospital with a normal temperature. Eight hours after admission her temperature, pulse and white count went up and she was operated. She recovered.

If it is true that the symptoms are due to absorption of the toxic product of a diseased pancreas it would seem best to operate as soon as possible.

There was a history of previous symptoms in five of those who recovered and in five of those who died. There were no previous symptoms in three who recovered and in four who died.

Of the patients who died three lived less than twelve hours after operation, four lived less than forty-eight hours. These I think without question died of toxæmia of the disease. One lived twenty-three days and died of sudden massive hemorrhage. She would have died soon however, from the complete destruction of the pancreas. One lived eight days and died of peritonitis. One lived eleven days and after recovering from the toxic symptoms died of an embolus. The last two were perhaps surgical deaths. All of the others, I feel sure, would have died just the same without operation.

From a comparison of this series with some others which have been reported it is evident that our mortality is too high. Perhaps this is because more of our cases were of the very acute type which nothing would save. I like to think so. If, however, operation is to accomplish anything it must be by adequate drainage and I am not satisfied that my own personal efforts in this particular have been entirely adequate. I shall in the next cases use a rubber tube drain packed around with gauze after the method of Moynihan, and drain the gall-bladder whenever possible whether it is definitely diseased or not.

How many of those who recovered would have recovered without operation?

Until we reach the point where we can feel sure we are right when we have made a diagnosis of Acute Pancreatitis, and have tried out enough of them without operation to be able to make a reasonable comparison, we cannot say with certainty which is the better treatment. Up to the present time the diagnosis is not very often made. When we do make it there is still some uncertainty in our minds as to whether it may not be some one of the other conditions which we know we can relieve by operation. Because of this uncertainty few of us, I believe, would have the courage to let one of these cases go even though we believed that the chances for recovery in Acute Pancreatitis were as good or better without operation. We do not believe operation will do any harm and it may be we are not right in our diagnosis.

In the light of our present knowledge and experience then, we must continue to operate.

I will report in some detail the six cases of my own and cite the others briefly.

CASE I Female Age 14 Admitted April 26, 1923  
Admission temp 99.8 pulse 100 W C 27800 B P

118/78 She was admitted to the Medical service at 11.15 A. M. and transferred to Surgical at 9.50 P. M. and operated at midnight. Between time of admission and time of transfer to Surgical service temperature rose to 102 and white count to 28,600.

The history of the case is as follows—Comes for relief of abdominal pain lasting three days. During the past year has had six or seven mild attacks of similar nature and one six weeks ago which lasted one day with nausea and vomiting. After that she was quite well until three days ago when she was rather suddenly taken with pain in both hypochondria, chiefly on right. Has vomited green material for three days. Bowels have not moved for two days. Pain is constant, aching (has not eaten since onset) severe enough to make her groan and cry.

The local—There is extreme tenderness in epigastrium more marked slightly to left of midline. There is also tenderness in lower left and right quadrants. Pressure over left side causes pain over appendix. The muscle spasm is more marked above navel on both sides and with pressure it is nearly rigid.

#### Probabilities —

- Appendicitis
- Perforated Ulcer
- Ruptured Liver Abscess
- Acute Pancreatitis

The Pre-operative Diagnosis on the operation sheet was Surgical Abdomen

#### Operation —

Right rectus incision from free border of ribs downward 5". On opening abdomen a considerable quantity of blood stained fluid escaped. A number of small areas of fat necrosis were noted in the great omentum. Exploration showed a tumefaction in the upper right abdomen apparently behind the peritoneum which was found to be the head of the pancreas. Over it coils of intestine were adherent to it and to the transverse mesocolon covering it. The foramen of Winslow was free and the blood stained fluid was issuing from it. It was not deemed best to separate the adhesions because of the danger of rupturing the gut of causing further damage to the pancreas itself and of unnecessary contamination of the general peritoneal cavity. Also it seemed that adequate drainage could be provided through the foramen of Winslow. A cigarette drain was therefore placed into the lesser peritoneal cavity through this foramen and a second drain into the right kidney pouch. Wound closed in layers leaving exit for the drains. The gall bladder was normal, stomach and pylorus were normal.

#### Post-operative progress —

Temperature dropped by lysis in seven days to normal. Pulse between 90 and 100. Abdomen drained a practically clear fluid slightly blood tinged at times and this fluid had no digestive action upon the subcutaneous tissues or skin. Urine was negative for sugar and there were no fatty stools.

In the 12 days following operation she had four attacks of epigastric pain with nausea and vomiting. These required morphine to relieve and the duration was six to eight hours. Each attack was similar to the attack she experienced on entrance to the hospital.

After 12 days she had no pain was on house diet and was discharged on 37th post-operative day. Drainage had ceased at end of three weeks.

CASE II Female Age 54 Admitted March 26 1922 at 9.55 P. M. Pulse 120 Temp 99.4 General condition very poor. Abdomen distended with gas and tender throughout. There is increased tenderness and rigidity over the whole right abdomen with

localized tenderness and pain on slight pressure over McBurney's point. Patient is groaning with pain and belching gas.

Present illness began two days ago with severe sharp pain in right hypochondrium with vomiting. The pain gradually lessened and the most distressing feature was gas until this afternoon when the pain localized in the right lower quadrant over the appendix.

Has had attacks of indigestion occasionally.

The admission diagnosis was Acute Appendicitis. She was operated the night of admission the pre-operative diagnosis being recorded as Surgical belly, acute appendicitis or cholelithiasis. Right rectus incision opposite umbilicus later extended upwards to free border of ribs. On opening peritoneum abdomen was found to be filled with bloody fluid. The omentum which was very fat was studded with small whitish spots. These conditions made it seem probable that we were dealing with a hemorrhagic pancreatitis. The right edge of the omentum was firmly adherent to the lateral abdominal wall. The stomach and duodenum were firmly fixed posteriorly. The head of the pancreas could be felt and was large and soft. Adhesions in that locality were dense and before it was possible to get into the lesser peritoneal cavity the patient's condition made it seem best to insert cigarette drains down to the region of the foramen of Winslow and close the belly. The gall bladder contained stones. The patient died seven hours after completion of operation.

CASE III Female Age 25 Admitted July 25 1922 Pulse 112 Temp 101.4 W. C. 13,400 B. P. 140/60

History from private notes—About five days ago was riding in back seat of automobile when car collided with an obstruction and she was thrown against the back of the front seat, striking her abdomen. I saw her four days after the accident in consultation with her family physician. She had been having some pain and some tenderness in upper abdomen ever since the accident. There had been no vomiting and there was no muscular spasm or rigidity. My note says suspect internal injury but symptoms are not severe or definite enough to make a diagnosis. The doctor called me up the next day and reported that tenderness was greater and there was some distention and she was vomiting. I advised him to send her to the hospital which he did.

On admission patient looks sick and toxic. Is complaining of a good deal of pain in upper abdomen. The abdomen is markedly distended symmetrically on both sides but most marked above the navel. There seems to be diffuse tenderness and involuntary spasm most marked in epigastrium. There is dullness in each flank which shifts about 2" on turning on either side. The distention rapidly increased and spasm and tenderness became more marked. She was operated eight hours after admission.

Pre-operative diagnosis—Probable rupture of viscus.

Median incision above umbilicus. On opening peritoneal cavity it was found full of dark-colored fluid blood. Omentum was studded with small necrotic areas making it evident that the trouble was in the pancreas. By exploration it was found that the blood was coming through the foramen of Winslow. An opening was made into the lesser peritoneal cavity by tearing through the gastrohepatic omentum. The head of the pancreas could be felt and gave the sensation of palpating a sponge. A gauze packing was inserted down to the head of the pancreas and wound closed anatomically leaving exit at upper end for the packing.

The temperature came down by lysis and the distention gradually decreased so that on the 8th day the temperature was normal, the abdomen flat and

soft and the patient comfortable The packing was removed on the 5th day and a rubber tube inserted which was removed on the 8th day The pulse stayed up to 120-130 till the 8th day when it began to drop and on the 10th day was 100 At 5 in the morning of the 11th day the patient became cold and clammy with a slow feeble pulse Half an hour later she complained of choking and began to get cyanotic She grew rapidly worse and died at 6:50 The skin wound was opened the whole length There was no hemorrhage and drainage sinus was not occluded The subcutaneous tissues were necrotic The terminal symptoms seemed to be those of pulmonary embolus

**CASE IV** Male Age 43 Admitted 12:15 P M Feb 12, 1923 Temp 99 Pulse 72 W C 26,000 Has had "stomach trouble three or four years" Acute pain began one hour before admission He is pale, sweating and feels very chilly but no actual chills Pulse weak and thready, appearance of shock. Complains of extreme pain and soreness in epigastrium and cries out when moved or palpated over epigastrium Board like rigidity over both upper quadrants and considerable spasm in both lower quadrants No tenderness in right lower quadrant nor elsewhere than epigastrium No dullness in either flank. No history of trauma

Operation at 1:30 Pre-operative diagnosis—Ruptured viscus Median incision from ensiform to below umbilicus As peritoneum was opened a considerable amount of bloody fluid escaped Gall bladder was found full of stones There was no evidence of rupture of stomach, duodenum or intestines There was a large hemorrhagic area in region of duodenum and pylorus

An opening was made in the gastrocolic omentum and a large amount of bloody fluid escaped from the lesser cavity Pancreas was palpated and found to be swollen and enlarged Wicks packed in Gall bladder was opened and stones removed A tube was inserted and sutured with a double purse-string suture Wound then closed in layers leaving exit for the drains

Patient died at 2:25 P M the following day

**CASE V** Female Age 45 Admitted 1:05 P M Dec 6, 1926 Pulse 120, Temp 110.4, W C 12,300 B P 140/110 Blood sugar 14% Chief complaint—Pain in epigastrium and vomiting Last Monday (nine days ago) was taken with a rather severe "sick stomach", felt as if she was nauseated but no vomiting She went out in the air and felt better Tuesday no symptoms and felt good until Thursday when she had some sick stomach no definite pain Friday again sick. On Saturday had one bad spell but after this ate a very hearty supper All of these spells were accompanied with eructation of a great deal of gas Sunday morning (3 days ago) following the taking of a mouthful of food was taken with a severe pain in epigastrium This was so severe that it doubled her up and made her cry out and she had to go to bed In a short time she was taken with a severe vomiting of bile Pain was continuous for some hours and then would come at ten minute intervals Had a narcotic at night. On morning of admission felt good complained of some general pain and was tender in right lower quadrant. On her way to the hospital she vomited considerably During the week she had taken a good deal of laxative Had an attack similar to the onset of this one about one year ago About two months ago she fell and injured her left lower ribs Has always had much gas—eructations and flatus Abdomen is markedly distended throughout, is tender all over abdomen with area of greatest tenderness in low epigastric or high umbilical region does not extend particularly to left or right There is a slight increase in muscle spasm

in right upper rectus—not particularly definite Rebound tenderness marked

Operation immediately after admission Pre-operative diagnosis—Appendicitis, acute, perforated Right rectus incision opposite umbilicus, on suspicion that it might be an upper abdominal condition On opening the peritoneum there escaped a small amount of brownish fluid and the omentum was seen to be dotted with whitish spots of fat necrosis making the diagnosis of acute pancreatitis evident. This wound was closed and a high right rectus incision was made On opening peritoneum there was a large amount of bloody fluid escaped An opening was made through the gastrohepatic omentum and two cigarette drains inserted Wound closed in layers leaving exit for the drains

The head of the pancreas was found much enlarged and spongy Intestines and omentum were matted together

After operation the distention and vomiting continued, patient went into condition of collapse and died in 24 hours

**CASE VI** Female Age 48 Admitted March 6 1927 Temp 99, Pulse 100, W C 19,100 B P 140/60 Does not appear very sick Last November she was admitted to the hospital because of an attack of severe sudden pain in epigastrium, of a colic nature, constant and of about two hours duration This did not radiate to any location, was not accompanied or preceded by vomiting or a chill Except for slight nausea there was no other symptom. There was no constipation, no flatulence Previous to this she had had three similar attacks in June, July and August 1926 These attacks come on suddenly and except for slight feeling of distress in stomach there is nothing to announce them She stayed in Hospital one week and was discharged with a diagnosis of cholelithiasis with adhesions From then until two weeks before present admission she was free from symptoms Then she was seized with a sudden sharp mid-epigastric pain which radiated to precordial region, with vomiting This lasted one day and then gradually wore off There has been no pain since but a feeling of distress and soreness in epigastrium has remained There is a smooth rounded mass occupying the right hypochondrium and extending to the left just beyond the mid line which is quite sensitive to pressure but not extremely so This mass seemed to be increasing in size and the patient was evidently losing ground rather than getting into better condition so on the 10th day after admission she was operated The pre-operative diagnosis was upper abdominal tumor gall bladder, growth in the liver or carcinoma of the stomach

High right rectus incision The anterior wall of the stomach presented in the incision being pushed forward by a mass lying behind the stomach and firmly adherent to its posterior wall The liver was normal, gall bladder thick walled empty and apparently bloodless A finger in the foramen of Winslow impinged upon a smooth fluctuant mass lying within the lesser omental cavity Nothing resembling a pancreas could be felt The stomach was pulled downward and by blunt dissection an opening was made through the gastrohepatic omentum and the wall of the tumor which were amalgamated together into one membrane Approximately four ounces of a dark, bloody oily fluid escaped A finger inserted in this opening disclosed a smooth cavity in the lower portion of which could be felt what appeared to be the upper margin of the head of the pancreas somewhat indurated but not of a stony hardness Two cigarette drains were placed in the cavity and abdominal wound closed around them

The patient did well for the first week then began to feel discomfort in the stomach and to vomit occasionally On the 10th day it began to be evident that

the tumor was recurring Drainage had practically stopped by the 7th day and the drains were removed. The 11th day the temperature went up to 102 and the pulse to 130 The tumor rapidly increased and she became unable to take any nourishment. Several attempts were made to reestablish drainage by inserting a hemostat into the sinus without success and on the 14th day after the first operation she was again taken to the surgery Under ether, the original wound was reopened the mass found in apparently the same position as before original opening through gastrohepatic omentum sought but not definitely found An opening however was made with the finger and a large quantity of creamy pus with a foul odor was evacuated Two rubber tubes were inserted and the lower portion of the abdominal wound closed There was practically no improvement after this operation The tubes remained in place but there was very little drainage The tumor did not reappear On the 5th day there was a rather alarming hemorrhage from the wound which was controlled by packing Packing removed the next day with no recurrence of bleeding Four days later a massive hemorrhage occurred from which she died in a few minutes

There was an autopsy by Dr Hunt

Here is a summary of the autopsy report as it relates to the pancreas There was a localized adhesive peritonitis There were areas of fat necrosis in the mesenteric fat. The drainage sinus led through the gastrohepatic omentum into a series of small cavities branching downward and to either side. One of these was occupied by a loose slough lying in a pool of dark fluid There were several small remnants of pancreatic tissue lying along Winslow's duct which could be traced from the ampulla to the wall of a large abscess at the left This was full of thick partly purulent fluid but containing shreds and small chunks of necrotic tissue A search was made for the source of the hemorrhage but none was found

There was at no time any sugar in the urine, and no variation from normal in the blood sugar

Female Age 63 Died Preoperative diagnosis hemorrhagic pancreatitis Acute onset 2 days ago Severe dull pain in epigastrium with vomiting Has been subject to bilious attacks Pain very severe Bloody fluid and fat necrosis Drainage through gastrohepatic omentum and through gall bladder Lived 24 hours

Male Age 25 Died Preoperative diagnosis, intestinal obstruction Acute onset 5 days before admission Severe pain in region of umbilicus with vomiting No previous abdominal history Pancreas incised and drained Bloody fluid Pancreas enormously thickened Lived 48 hours

Female Age 53 Died Preoperative diagnosis Cholecystitis Acute Pancreatitis Acute onset 2 days before admission Pain and vomiting Indigestion and heartburn for 6 months Drained by gauze down to foramen of Winslow Cholecystectomy for stones Straw colored fluid fat necrosis Pancreas not felt to be enlarged Lived two days

Female Age 38 Recovered Preoperative diagnosis Impacted stone in common duct or pancreatitis Several attacks of acute pain during two weeks preceding the severe attack on day of admission Urine positive for sugar Blood sugar 36 Pancreas congested Stone in common duct. Gall bladder had been removed at a previous operation. Incised peritoneum over pancreas Removed stone from common duct and drained it Bloody fluid No fat necrosis

Female Age 15 Recovered Preoperative diagnosis acute abdominal crisis cause undetermined Attack of pain in region of umbilicus two weeks before admission Stayed in bed one week during which she vomited 5 to 7 times Bowels moved with cathartics Went to work but was weak and nause-

ated Two days ago pain returned She became sicker and was sent to hospital where she was operated as an emergency case A good deal of blood in greater cavity and lesser cavity filled with clots Pancreas small and hard and fairly well defined Cigarette drain through gastro colic omentum.

Male Age 42 Recovered Preoperative diagnosis, Acute Pancreatitis Acute onset pain and vomiting ten hours before admission No previous abdominal history Drainage through gastrocolic omentum Pancreas hard Bloody fluid and fat necrosis

Female Age 28 Recovered Preoperative diagnosis, Cholecystolithiasis Not acutely ill Pain in gall bladder region right shoulder and back after eating for one year Continuous tenderness in gall bladder region Drainage through gastrocolic omentum Gall bladder full of stones drained Bloody fluid and fat necrosis Pancreas enlarged and tense

Male Age 56 Died Preoperative diagnosis Perforated duodenal ulcer Pancreatitis Acute onset with no previous abdominal history Excruciating pain in both upper quadrants with vomiting Bloody fluid no fat necrosis Pancreas apparently enlarged Drainage through gastrohepatic omentum Died on 5th day of general peritonitis

Male Age 59 Recovered Preoperative diagnosis Acute Pancreatitis Sudden onset—no history of previous attacks Pain, vomiting and obstipation Bloody fluid and fat necrosis Drained through gastrocolic and gastrohepatic omentum Sugar in urine Blood sugar highest .15%

Female Age 46 Recovered Preoperative diagnosis Cholelithiasis Cholecystitis Sudden pain in epigastrium with vomiting Date of admission Dec 17 Tenderness on deep pressure over gall bladder region Operation Dec 27 ten days after admission Drainage through gastrocolic omentum Gall bladder contained stones Drained Pancreas hard and nodular Areas of fat necrosis No bloody fluid

Female Age 35 Died Preoperative diagnosis Acute Pancreatitis Sudden onset—pain vomiting no obstipation. Bloody fluid and fat necrosis Drained through gastrohepatic omentum Pancreas soft. Died 18 hours after operation Temperature rose from normal at time of operation to 105 before death.

Male. Age 50 Recovered Preoperative diagnosis Perforated duodenal ulcer or Acute Pancreatitis Sudden onset, no previous attacks Knife-like pain in upper abdomen with vomiting Bloody fluid Pancreas soft and hemorrhagic Drained through gastrohepatic omentum Four weeks later had a gastroenterostomy for pyloric obstruction due to adhesions This was in 1920 In March 1927, was admitted again following an automobile accident. Since previous admission has been very well except for severe headaches Has severe pain in epigastrium and a hard smooth extremely tender mass 2 inches wide and 4 inches long in mid-epigastrium. This was diagnosed as a hemorrhage into the pancreas from trauma He recovered from this without operation and was discharged on the 32nd day Four months later he was again admitted During the interval his only real symptoms were slight tenderness in the epigastrium and a burning sensation in the stomach. He was very much depressed mentally chiefly by the fear that he had a cancer He was operated again The tenderness and tumor were accounted for by a necrotic area in the anterior surface of the left lobe of the liver from which was scooped about an ounce of debris The anterior wall of the stomach was adherent to the abdominal wall in such a way as to make a kink at the pylorus The pancreas so far as could be seen or felt, showed no sign of disease He is now convalescing

## PANCREATITIS, ACUTE AND SUBACUTE—SOME SPECIAL PROBLEMS IN POST-OPERATIVE CARE\*

BY ERNEST L. HUNT, M.D., F.A.C.S.†

AT the 1912 clinical congress of surgeons in Philadelphia Dr. Maurice H. Richardson concluded a paper upon "Surgical Diseases of the Pancreas" with the words "There is much to be learned."

The fifteen years that have elapsed since then have seen certain inroads made upon that dearth of knowledge particularly by establishing the function of the islands of Langerhans through the discovery of insulin and by the development of clinical methods of blood chemistry whereby we may hope to attain a better understanding of the physiological disturbances following pancreatic inflammation, injury and disordered function.

Even now, acute lesions of the pancreas are so infrequent that isolated cases are deemed worthy of report and sometimes of review. It is seldom that a surgeon is able to report more than a score of cases from his personal experience. Probably Chamberlain's estimate of one case occurring in every 5000 surgical admissions fairly portrays the general incidence of the disease. To make the clinical diagnosis, do a timely operation and relieve a patient afflicted with acute pancreatitis is still an achievement justifying considerable satisfaction.

In the paper referred to above Dr. Richardson, while expressing considerable doubt as to the therapeutic value of operation, stoutly maintained that early exploration was the best means of saving the patient then apparent, besides affording opportunity for studying the living pathology without which that intimate knowledge of the disease necessary to the evolution of more efficient measures of treatment could hardly be attained.

On the basis of my modest experience I feel that his advice is as sound today as it was in 1912. It is not, however, upon the immediate operative phase of treatment that I wish to dwell but rather to bring to your attention the treatment of concurrent pathology and altered function of other organs in the neighborhood and to physiological needs incident to the sudden shutdown of the pancreas itself as illustrated by some of the cases I am able to present.

I have selected nine cases, with one exception from my own experience, and grouped them according to the outstanding problem of post-operative treatment presented. The problems considered include hemorrhage, obstruction, and pancreatic deficiency.

### HEMORRHAGE

One of my acute cases with successful early intervention was a girl of 15 years who presented the unusual situation in which the signs and symptoms of internal hemorrhage dominated the picture.

She was taken ill two weeks before admission with epigastric pain and vomiting for which she stayed in bed a week, then returned to her work. Symptoms recurred two days before entrance and on the morning of entrance became excruciating with repeated vomiting. When seen in the admitting room she was pallid, skin cool with weak thready pulse of 120, anxious facies, legs flexed, belly protuberant, tense and tender—a perfect external picture save for her age of ruptured ectopic pregnancy. Operation as quickly as preparations could be made under local and gas oxygen liberated much blood from the general peritoneal cavity. The gastrosplenic omentum was bulging forward and dark in color. This was penetrated and quantities of soft black clots scooped out with the hands, drains introduced and the wound closed, the work was completed in 14 minutes but the patient was pulseless. Salt solution, subpectorally and intravenously followed shortly by transfusion brought favorable response and after a protracted convalescence complicated by left pyelitis she recovered. There was no glycosuria—no gall stones were felt. The pancreas felt hard but was not visualized.

### DUODENAL OBSTRUCTION AS AN EARLY POST-OPERATIVE COMPLICATION

It is highly probable that the initial vomiting is due either to obstruction or to the pathology which results in obstruction after a week or more. The sudden infiltration of the retroperitoneal space in the neighborhood of the pancreas and duodenum especially when the head is the seat of the lesion must seriously encroach upon the duodenum both with physical pressure upon its wall and blood supply as well as to disturb its innervation and may be regarded as a major indication for treatment.

The principle of detoxifying treatment applicable to other forms of acute high obstruction would seem indicated here. In the two cases which constitute this group this possibility was not appreciated and mechanical relief was invoked.

For the first case I am indebted to the courtesy of Dr. F. H. Washburn by whose invitation I performed the second operation.

A married woman of forty had had severe previous attacks of upper right quadrant pain over a period of five years. October 10, 1921 during a very severe attack she was operated upon at the Holden Hospital by Dr. Washburn who removed several stones and drained the gall bladder. About the 16th day of convalescence she vomited 30 oz. of fluid and thereafter a large quantity daily until the 31st when she was re-opened a mass of adhesions about gall bladder

\*Read at the Annual Meeting of the New England Surgical Society in Manchester, N. H. October 1, 1927.

†For record and address of author see "This Week's Issue" page 645.

pylorus and duodenum seemed to account for the trouble and a posterior gastroenterostomy was done. Before closing fat necroses were noticed and by poking through the gastrohepatic omentum a large abscess was opened, thick pus and sloughs being evacuated. Cigarette drains were inserted and a large tube replaced in the gall bladder. Four weeks more of tedious convalescence followed. She was taken home Dec. 4 but immediately had a severe attack of pain with vomiting and collapse. Again a period of illness, this time with mild mental disturbance. A sinus opened through the vaginal wall and gradually discharged. She survived, drew out four years as a poorly nourished asthenic mentally deteriorated individual and died of pancreatic deficiency but without glycosuria.

A second illustration of this complication is reported through the courtesy of Dr. A. W. Marsh.

C. D. male, 50 with past history free from stomach or abdominal trouble was seized by upper abdominal pain and vomiting 3 hours after his usual evening meal Nov. 18, 1920. Admitted Nov. 19 with pulse 84, temp. 99.2, W. B. C. 19,400, no glycosuria. His abdomen was generally distended and there was tenderness and spasm across the epigastrium. Dr. Marsh explored finding free bloody fluid in the general peritoneal cavity with a hemorrhagic mass in the lesser sac. Appendix, gall bladder and ducts, stomach and duodenum were normal except for adhesions about the gall bladder and the juxtaposition of the mass to the duodenum. Drainage of lesser sac was established, convalescence was rough after the first week, epigastric pain recurred and a palpable tumor developed for which on the 14th day the wound was re-opened and thick pus liberated, cultures of which showed *S. py. aureus*. The pus soon gave way to a thin alkaline fluid which contained pancreatic enzymes. During the fourth week symptoms of pyloric obstruction developed and x-ray showed nearly complete retention of the barium in the stomach—a second exploration on the 27th day found a large abscess occupying position of the head of the pancreas which was drained and posterior gastroenterostomy done. Gradual recovery ensued and he was discharged on the 61st day after the initial operation. He is living today but a weakened neurasthenic individual.

In two recent cases of small intestine obstruction with enterostomy we have been able to maintain nutrition until the inflammatory cause of the obstruction cleared by the systematic intravenous administration of glucose with insulin after the manner described by Thalhimer and the patients made excellent recoveries. Whether or not such treatment would have availed to tide these two cases over their obstructive period is problematical but probable. The withholding of food by mouth with stomach lavage must have its due place in such a plan of treatment.

That permanent obstruction may result is shown by the following case, the acute phase of which occurred early in my practice, the patient reporting to me at intervals for 19 years and finally leaving me her body for autopsy.

Jan. 10, 1904. A. B., female, aged 48, whose father died of acute diabetes and one of whose living sisters had diabetes, was seized with violent epigastric pain radiating to left hypochondrium and scapula. Vomiting was almost continuous but without relief of pain.

When first seen 20 minutes after the onset she was on her knees straining violently to vomit but raising nothing. She was very pale, beads of perspiration stood upon her forehead and the radial pulse was threadlike and barely perceptible. Her temperature then was 95.5. The abdomen was spastic with extreme tenderness over entire epigastrium. The urine showed albumin and casts, W. B. C. 37,800. Large doses of morphine relieved her somewhat. The following evening she was operated at my request by Dr. L. F. Woodward. The abdomen was full of bloody fluid which seemed to well up from the foramen of Winslow. Fat necroses were scattered over the omentum and mesentery. She was in poor condition and he closed without further exploration but kept a constant flow of hot saline running into the abdomen as he sewed. On the third post-operative day there was 2.38% of sugar in the urine. This rapidly cleared and she was discharged on the 30th day. She had had two previous illnesses of similar but less intense character. Seventeen months later she returned to the hospital having had attacks of epigastric pain, nausea and vomiting since discharge but of increased frequency during the past 3 months. Her skin was lemon yellow and a tender mass could be felt above navel to right of median line. By operation Dr. Gage found a mass apparently on the posterior wall of the stomach so adherent as to preclude removal. The incision was closed under the impression that she had cancer. Again she made a good operative recovery and to our surprise there was gradual diminution of the mass so that in the next few months it had entirely disappeared only to be succeeded by fairly regular attacks of vomiting of copious amounts often with food fragments from the previous day's ingestion. She remained thin, pale and without strength to earn her livelihood but was given a home by a better circumstanced sister in Providence where she was studied at my request by Dr. John Ferguson who diagnosed pyloric obstruction with dilated stomach. Operation being rejected, she was taught to use a stomach tube and got on in that way for several years but never gaining strength enough to become self-supporting. An x-ray taken about 1912 was reported as showing complete retention of the bismuth meal in the stomach.

During the war period and after I saw but little of her but in general she had better health, the obstruction was less complete, being able to go several days without stomach washing and constipation was less marked. Aug. 28, 1923, she was brought into the hospital after a week's illness vomiting, distended and in extremis. She expired the following day. Autopsy found intestinal obstruction from entanglement of the ileum in adhesions to the lower end of the abdominal scar. The pylorus was adherent to the upper end of the scar and with the first portion of the duodenum was much constricted. There were two small pyloric ulcers and the gall bladder contained many small stones. The common duct was dilated and a small stone was lodged just behind the orifice of the ampulla. The pancreas was represented by small portions of the head and tail, the two being connected by a fibrous structure in lieu of the body. No duct of Santorini could be discovered. The duct of Wirsung could not be traced beyond the 3 cm. which entered the remnant of the head, although had a more deliberate technique been used more information could doubtless have been gleaned.

That she could live on for years with so small an amount of pancreas capable of functioning yet never develop diabetes confirms in the human the result of the resection experiments wherein animals whose glands were not completely removed failed to develop diabetes, proving that

even a small fraction of the gland may be sufficient to maintain the carbohydrate metabolism.

The obstructive sequence doubtless represented a subsequent attack with oedema and fibrinous exudate in and about the head which later organized involving the duodenum and adjacent structures, finally leaving strong adhesions and pyloric thickening. What the course of this case might have been had the gall-bladder been adequately drained or removed at the first operation is an interesting speculation incapable of answer. It serves, however, as an urge to greater thoroughness in seeking out all removable pathology when confronted with pancreatitis.

#### PANCREATIC DEFICIENCY GROUP

In two cases deficiency of the internal secretion played a recognizable and in one a vital role in the post operative management.

H T L, M, 59, salesman, temperate, having a negative past history except for flatulence after meals, was entering Worcester by automobile about 3 P M April 18, 1927, when he was seized with cramp-like pain in the right side near the navel followed by vomiting. He stopped at a store from whence he was brought to the hospital by ambulance. On admission he was pale, pulse 80, temp 97, in severe but not excruciating pain, very tender in epigastrium. Urine negative. W B C 19,700, B P 118/60. Next morning he was distinctly worse, restless with increase of abdominal signs. 500 cc of 10% solution of glucose and insulin was given. Operation found a large amount of bloody fluid mostly collected in the left side of the abdomen and fat necroses on the omentum. In the lesser sac I found bloody fluid containing fat droplets. No stones were palpable in the gall bladder or ducts. The pancreas was obscured by fat and blood. Both peritoneal sacs were drained.

There was post operative vomiting succeeded by hiccup and moderate glycosuria during the first week but the blood sugar was not above normal limits. Under supervision of Dr A. W. Atwood small doses of insulin were given daily until glycosuria disappeared and patient was on a maintenance diet.

The second case of this type was a more serious and interesting proposition.

A Hebrew woman of 38, married, had lost her gall bladder from cholelithiasis about 1917, entered Dec 18 1926, from the office of the surgeon who had done the previous operation. She had been suffering for the past two weeks with severe pain in gall bladder region radiating to right shoulder. She had had morphine before coming in but suffered severely during the night and when seen on ward rounds was sitting up in bed in agonizing pain. Lips cyanotic, vomiting frequently exquisitely tender in epigastrium. Abdomen hard and distended although the enemata had brought away gas and small amounts of feces. Urine showed both albumin and sugar. Pulse 106 temp 100.2 R 22, W B C 18,000.

Operation was at once undertaken and was rather difficult because of old adhesions between duodenum and liver. Opened lesser peritoneal sac finding pancreas congested and hemorrhagic. Incised peritoneum in front of pancreas and liberated much dark blood. Found common duct much dilated opened it sufficiently to admit a finger and could feel stones impacted in the ampulla. These I could not dislodge but crushed with clamps and scooped out. An olive tipped bougie could then pass into duodenum. Drained common duct and lesser omental cavity.

The post-operative course was stormy enough. A severe bronchitis of somewhat asthmatic type complicated the first week. Bile drainage was profuse, glycosuria continued, cough and pain required considerable morphia. About Dec 26 (8th day) the mid portions of the wound separated and later the skin became undermined with bile and pus from which B pyocyanus was recovered. Blood sugar on this date was 260 mgm per 100 cc. Insulin was begun and continued daily in considerable amounts up to Jan 10th (23d day) when blood sugar was reduced to 180. The daily ration of insulin was then cut down to 18 units. The sugar disappeared from the urine five days later.

It is difficult to explain the persistent high blood sugar other than by conversion of her stored protein and fat. Acetone was present in the urine up to the fourth day of insulin treatment. Food was practically restricted to liquids and she vomited often. No bile came through the bowel although drainage of bile through the wound was plentiful. Stools were fatty.

Convalescence was further complicated by stomatitis, severe bronchitis and delayed wound healing. Daily nutritive enemata were given during most of February. Bile appeared in the stools about the 15th and by March 1 they were of normal color with diminution of bile from the sinus. During March there was steady improvement in appetite and strength and return to a fairly normal dietary did not result in glycosuria. She was discharged March 30 with a large granulating area. In August she returned for examination. There was a small wound hernia but otherwise she was in excellent condition, weight nearly normal, free from pain, urine negative for sugar.

#### MISCELLANEOUS CASES

One case of the hyperacute type. Operation on the fourth day finding blood and fat necrosis, drainage of the lesser sac, rapid postoperative rise of temperature and death within 24 hours. I firmly believe the delay lost her the only chance she had. This was the only immediate death in my series.

Two cases of pancreatitis of the subacute type with plastic exudate and fat necrosis associated with gall stones. Drainage of gall bladder and of lesser sac through gastro-colic omentum. Uneventful recoveries except for tonsillitis in one and wound hernia in the other.

In reviewing these cases I am impressed by the inadequacy of the laboratory studies although the usual routine work was done in most. Of course the biochemical methods of today were not available for the older cases and the emergency character of many limits the possibilities for concentrating special workers upon the problems which they present.

Still there are certain studies which can be carried out if the surgeon in control of the situation has a plan well in mind and the will to carry it out.

Reflecting upon the initial shock the theory suggests itself that it may be due as much to the sudden liberation of insulin as to the split proteins heretofore supposed. If one product of pancreatic function is set free why not another? Assuming that the tissues are flooded by insulin with consequent rapid lowering of the blood sugar a part of the shock phenomena are accounted for. With the pancreas as the seat of active inflammatory processes it is probable that after



the initial flood the supply of insulin falls below normal. In the meantime the liver glycogen has been depleted to restore the blood sugar possibly and probably beyond the immediate needs leaving a liver exhausted of its store and with the blood sugar in excess some of which spills over into the urine. It should be fairly easy to determine if this plausible theory be true by immediate and frequently repeated blood sugar estimations. If it be true our aim should be to spare the liver glycogen by supplying the glucose to the blood. If the exhaustion of liver glycogen is a factor in the hazard of operation as it may well be, the wisdom of supplying glucose before operating would seem clear. At the same time if the parallel to upper intestinal obstruction to which I have alluded above holds true there has taken place a lowering of the plasma chlorides with a tendency to alkalosis. Both glucose and chloride may with advantage be supplied together.

These points do not need to rest long upon theory—the surgeon has it in his power to check up if he has a well-organized laboratory and an earnest house staff.

The operation itself affords a unique opportunity to secure evidence provided the surgeon will burden his conscience with the need, his mind with the method and his operating room with the means for securing the materials. Generally speaking, however, we surgeons are less imbued with the spirit of investigation than with the human and praiseworthy desire to relieve the patient. But future patients will also need relief and if we can give in larger measure by more careful study of the one in hand that becomes equally praiseworthy.

• We well know that etiology is an open question. Archibald contends that it is due to regurgitated bile pathologically altered so that it can activate the trypsinogen. J. B. Deaver (following Mangeret) contends that it is due to the backing up of infected lymph. Repeated experiments by injecting various organisms into the lymph spaces where this might occur if it were physiologically possible have been negative, according to Kaufman.

To me it has seemed beneficial and logical to wipe out and drain the bloody fluid from the peritoneum, believing it to be toxic, digestant and irritant. Archibald, however, says it is "protective" and its removal is of no consequence and "probably a mistake."

The parotids we know to be subject to specific infection. Why may not the same be true of the pancreas? Chamberlain reports hemolytic streptococci from the bile of four hyperacute cases. May there not be a selective strain of streptococci for the pancreas as Rosenow has shown to be the case for the stomach ulcer, appendicitis and gall-bladder diseases?

The key to the problem lies with the surgeon. It is his function to organize the special studies, see to it that all possible material from the opera-

tion be collected and properly preserved, forwarded and studied as to bacteriology, chemistry, and toxicology by all means available. The time-honored swab culture from the peritoneal cavity contributed much to our clinical education but today is hopelessly outclassed by better methods. Should the surgeon fail to save his patient the post-mortem examination must not be neglected and in such cases where the etiology is obscure I have no doubt we will presently insist that our autopsies be conducted with as rigid regard to asepsis as we now practice in our operating room.

#### CONCLUSION

As in 1912 there is still much to be learned about pancreatitis. Treatment is far from standardized and the moment and method of operation are uncertain.

But in 1927 we are better equipped to advance our knowledge and even now it is probable that fewer lives may be lost when prompt and efficient use is made of those measures now available for sustaining the physiological processes temporarily eclipsed during the acute stages or permanently impaired according to the extent of the damage wrought by the disease.

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#### DISCUSSION

MICHAEL F. FALLON, M.D., F.A.C.S., Worcester. I would like to introduce two pictures of an autopsy specimen, showing the size the pancreas can attain (showing pictures).

I wish to congratulate the two gentlemen whose papers have been read. The papers showed careful study, but the most noteworthy thing to me was the progress shown in the treatment of pancreatitis in the last few years. As late as 1891, Von Gerlach said in dismissing the subject of the topographical anatomy of the Pancreas "that the organ had no clinical interest as it was almost impossible for the surgeon to reach it."

We owe a great deal for the progress we have attained to American investigators, notably to the late Dr. Reginald Fitz.

The pancreas necessarily is a dual organ and the word *pancreas* is derived from the Greek—



from "pan" meaning all, and from "xreas" meaning flesh, a more appropriate name, however, might be "all activity" instead of "all flesh"

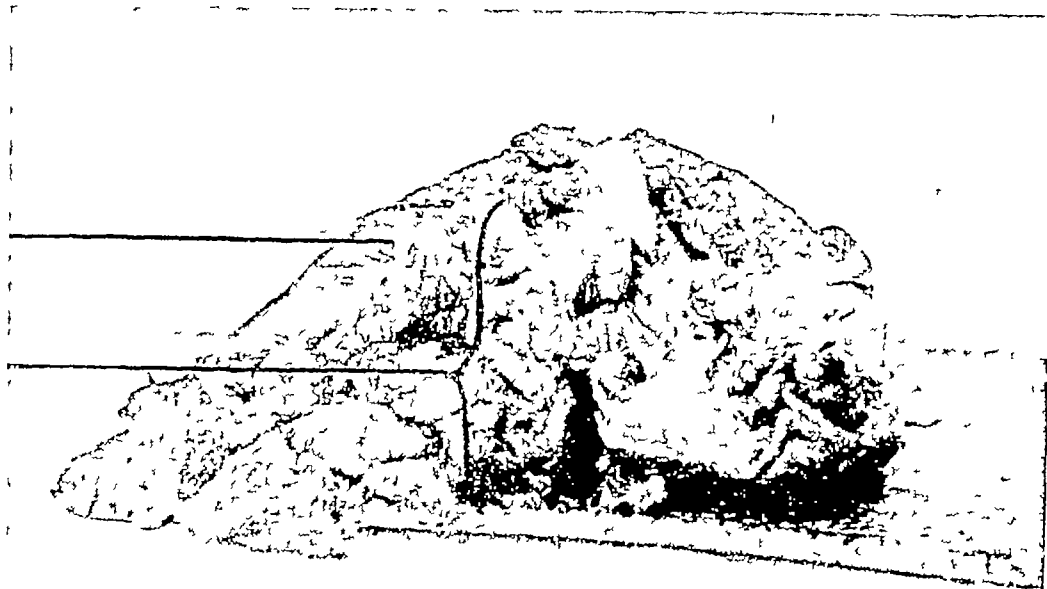
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investigator found that the pancreatitis began in eight hours after injection of the duct of Wirsung

Acute pancreatitis presents the picture of phlegmon, and as Dr Watkins said "drain always." Acute pancreatitis must always be drained, and an incision into the pancreas, when

Transverse Colon

Pancreas



Autopsy specimen showing enormous size of a pancreas and areas of fat necrosis in Gangrenous Pancreatitis

or duct borne, and it may be due to infectious diseases of various kinds, even mumps and boils may incite pancreatitis. The most common cause, of course, is disease of the biliary tract as Dr Hunt said. But we cannot now attribute as formerly as a common cause that of sterile bile entering into the pancreas. Mann's experiments, I think, have disproved this as a frequent cause.

The diagnosis of acute pancreatitis may be very obscure, and acute pancreatitis should be looked upon as a perforative peritonitis, and although we cannot always make the diagnosis, I think it is incumbent upon us to operate immediately where the symptoms suggest acute pancreatitis. We have had a number of cases in the past few years, and the diagnosis is always difficult, recently one of our patients had been discharged from the hospital after cholecystectomy, she returned one week after her discharge for apparent intestinal obstruction, at operation we found acute pancreatitis, she died, and got no relief from operation.

I think the symptoms are due to the rapid destruction of the pancreas by the pancreatic secretion. Laboratory aids do not avail very much in the diagnosis of pancreatitis, as Dr Hunt said. By the time we get results from laboratory chemistry the disease is well advanced. One

we get the acute stage, should be done, and the bleeding, if possible, controlled. A noteworthy thing in two of our cases was that incision of the gangrenous pancreas caused no bleeding.

I think the Massachusetts General Hospital deserves credit for first having made incisions into the swollen pancreas, and it is given credit by foreign authorities. When a pancreas is swollen a long incision is made, and in one case, following long incisions of the pancreas, the patient recovered.

P E TRUESDALE, M D, F A C S, Fall River  
Dr Watkins very wisely stressed the importance of radical surgery and adequate drainage in the hemorrhage type of acute pancreatitis.

In giving the credit for the radical operation I think we ought to go farther than a mere mention of the Massachusetts General Hospital. It belongs to a member of this Society. For many years I had the impression that Dr C B Porter originally advocated incising the pancreas longitudinally, but on further investigation I found it was Dr Charles A Porter. In about 1908, a few years after Dr Porter's paper appeared, I operated upon a patient who had an acute hemorrhagic pancreatitis. This patient survived and sloughed out a large portion of the pancreas. She was kept under observation for many

years but eventually disregarded rules of diet. Before insulin was available she was brought into the hospital in a state of coma and died. At autopsy the amount of pancreas which could be found was amazingly small. Along the bed of the pancreas there were a few scattered islands of pancreatic tissue.

I want to mention the coexistence of cholecystitis with acute hemorrhagic pancreatitis. I do that to emphasize the importance of a careful search for areas of fat necrosis in the presence of acute inflammatory conditions of the gall-bladder. In one such case the pancreatitis escaped our notice and the patient died. The autopsy revealed acute hemorrhagic pancreatitis. There were no areas of fat necrosis in the region of the gall-bladder or the duodenum or on the omentum, but on raising the omentum and transverse colon and examining the transverse mesocolon there was a diffused area of fat necrosis. Therefore, it is well to bear in mind that areas of fat necrosis may appear on the under side of the mesocolon when they are not present in the region of the gall-bladder.

ALFRED M. ROWLEY, M.D., F.A.C.S., Hartford. There is no acute abdominal condition which more puzzles the surgeon in making a diagnosis than acute pancreatitis, and I think the reason for it is that the picture is so clouded when the surgeon sees it. However, there are certain symptoms which always present themselves especially from the patient's history, and one is the acute abdominal pain, a sudden acute abdominal pain which is atypical of other conditions in the upper abdominal cavity. Another quite constant symptom which I do not think has been referred to here, is the pain in the left back.

The etiological pathology of pancreatitis has been much discussed. Some years ago we considered all cases due to infection through the bile stream. Later Deaver and Judd discussed the possibility of the pancreas being infected through the lymphatic channels. Should the surgeon drain the gall-bladder in all cases? The last case I had quite recently I could find no evidence of disease of the gall-bladder. It was not thickened, there were no adhesions and no glands palpable along the ducts. The stomach and duodenum were normal in appearance, therefore I could see no reason for draining the gall-bladder. We speak of a hematogenous kidney, and I believe that some cases of pancreatitis are infected through the blood stream. In these cases I question whether artificial bile drainage is of any value.

FRANK H. LAHEY, M.D., F.A.C.S., Boston. This is a very interesting paper of Dr. Hunt's, and contains, I believe, two points which should be stressed. First, the point of glycogen reserve in the liver is a very important one. Of all the cases having pancreatitis, a number will have bile duct infection and liver infection, and these patients with liver infection stand either

very badly. They stand either much better, however, if the glycogen reserve in their livers is elevated.

We know that dogs, for example, do not stand large doses of carbon tetrachloride if they have been on a high fat diet, showing central necrosis of the liver. If, however, a dog has been on a high carbohydrate diet, he will stand much larger doses of the carbon tetrachloride without damage to the liver, and in the same way patients, particularly those with liver damage from infection, will stand either anaesthesia much better if they have an elevated glycogen reserve in their livers following the administration of glucose and a high carbohydrate diet.

It is evident then that these patients should have plenty of glucose, 50 grams with 750 c.c. of salt solution of normal or double saline strength, dependent upon the relation of the blood chlorides to normal. We have taken the position in our clinic regarding insulin that it is unnecessary, and that convincing evidence as to its value in combination with the glucose is lacking.

The other point is the relation of pancreatitis to gall-bladder and biliary tract infections. It is very possible that it is often the end stage of gall-bladder and bile tract infections.

It is a fortunate fact in the pancreatitis associated with gall-bladder disease that the largest number of the islands of Langerhans are in the tail of the pancreas and that the infections associated with gall-bladder disease are in the head of the pancreas, so that many patients go through pancreatic infections of this type without having diabetes. We certainly feel sure, however from the experiences of Dr. Joslin, that the cases of diabetes associated with gall-stones are the most favorable of all types of diabetes, and that following the removal of the gall-bladder with its stones and infection, there is frequently a marked improvement in the course of the diabetes. This surely strongly suggests the effect of chronic gall-bladder infection on the pancreas.

Chronic pancreatitis and acute pancreatitis are, I believe, really in most instances an end stage of infection elsewhere, as duodenitis, duodenal ulcer, gastritis, gastric ulcer, cholecystitis, and appendicitis, and that our policy should be to clear up these diseases when possible, before they go on to such stages where, as a result of prolonged infection, late and often fatal pathology is produced.

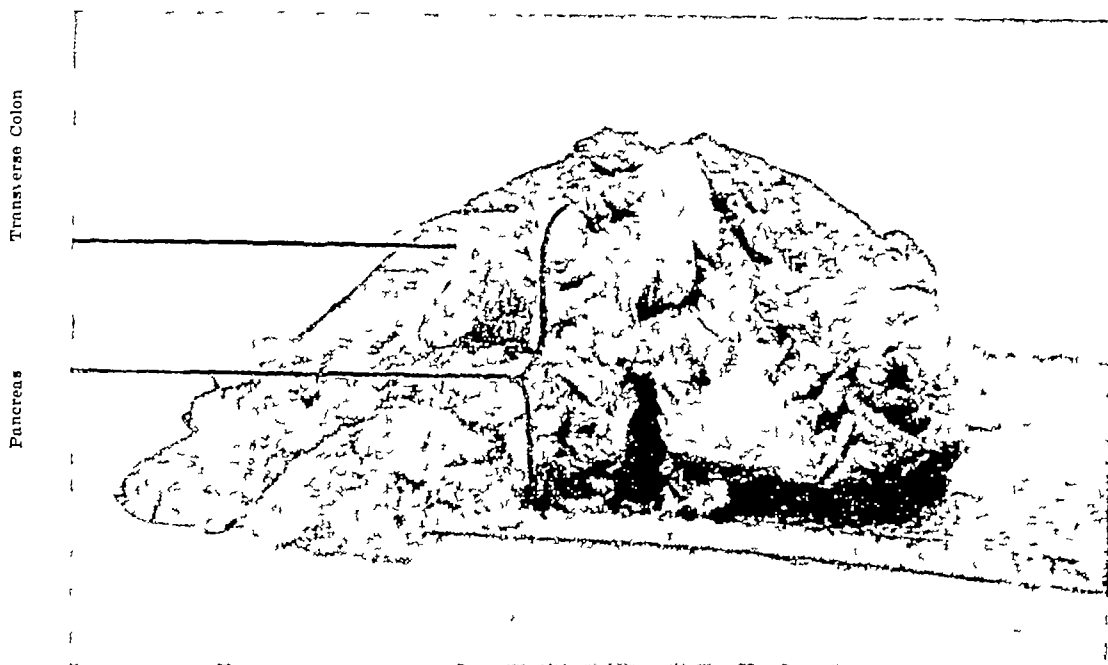
D. F. JONES, M.D., F.A.C.S., Boston. I would like to call your attention to one diagnostic point which has been of great value in distinguishing pancreatitis from cholecystitis. If there is tenderness in the region of the gall-bladder and the tenderness extends beyond the mid-line, it is very suggestive of pancreatitis. Gall-bladder tenderness is more likely to extend from the region of the gall-bladder to the right than to the left. It should not be forgotten that the tenderness from a pancreatitis is occasionally found in the left flank in the region of the kidney.

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It is a fortunate fact in the pancreatitis associated with gall-bladder disease that the largest number of the islands of Langerhans are in the tail of the pancreas and that the infections associated with gall-bladder disease are in the head of the pancreas, so that many patients go through pancreatic infections of this type without having diabetes. We certainly feel sure, however from the experiences of Dr. Joslin, that the cases of diabetes associated with gall-stones are the most favorable of all types of diabetes, and that following the removal of the gall-bladder with its stones and infection, there is frequently a marked improvement in the course of the diabetes. This surely strongly suggests the effect of chronic gall-bladder infection on the pancreas.

Chronic pancreatitis and acute pancreatitis are, I believe, really in most instances an end stage of infection elsewhere, as duodenitis, duodenal ulcer, gastritis, gastric ulcer, cholecystitis, and appendicitis and that our policy should be to clear up these diseases when possible, before they go on to such stages where, as a result of prolonged infection, late and often, fatal pathology is produced.

D. F. JONES, M.D., F.A.C.S., Boston. I would like to call your attention to one diagnostic point which has been of great value in distinguishing pancreatitis from cholecystitis. If there is tenderness in the region of the gall-bladder and the tenderness extends beyond the mid-line, it is very suggestive of pancreatitis. Gall-bladder tenderness is more likely to extend from the region of the gall-bladder to the right than to the left. It should not be forgotten that the tenderness from a pancreatitis is occasionally found in the left flank in the region of the kidney.

The term acute haemorrhagic pancreatitis, while descriptive of the great majority of cases, tends to make us overlook the milder forms in which no bloody fluid is found in the abdomen, and at present we are finding many cases in which there is no evidence of blood. In any case in which the pancreas has been suspected the base of the transverse mesocolon which covers the pancreas, should be examined for evidences of pancreatitis as Dr Truesdale has just suggested.

One of Dr Watkins' cases was so typical of many of the cases operated upon, I would like to call your attention to it. He spoke of a case which did well for a week after drainage was established. When the wick came out the temperature went up and Dr Watkins was obliged to go in and drain an abscess. This occurs so frequently that I never take out the wick under ten days because of the probability that some of the pancreas will slough and cause an abscess.

As to treatment one must be guided somewhat according to the theory of the cause of disease that one believes in.

I personally believe in the theory of Dr Archibald, which is, that the disease is due to backing up of bile or duodenal contents into the pancreatic duct. On that theory one should drain the biliary system and nothing else should be necessary. Experience has shown that these patients, in my hands at least, do much better if the capsule of the pancreas is drained. It relieves them of pain and nausea to a considerable extent. If the patient is seriously ill, this is all that is done. If the patient will stand more I also drain the gall-bladder and the pancreatic capsule. If in better condition still, I drain the common duct, remove the gall-bladder and drain the capsule of the pancreas, for better drainage is obtained by opening the common duct than by opening the gall-bladder. It is important in the very ill patients to do nothing but drain the pancreatic capsule.

ROYAL P. WATKINS, M.D., F.A.C.S., Worcester. The matter of the fat necrosis at the base of the mesentery—the case I reported in my paper had that fat necrosis, and there was none anywhere else.

As to the question of the difficulty of making a diagnosis I would like to mention a case I had last Thursday. I was called to the hospital to see a patient who had been brought in in a very serious condition and the doctor who had attended her gave this story—the day before, she was

seized at noon with a very severe pain in the epigastrium with no warning and no previous symptoms. Her pulse became very weak and rapid. She was in collapse, also, she vomited but not profusely. The doctor gave her morphine. He was compelled to give her a grain and a quarter of morphine between two o'clock in the afternoon and the time she came into the hospital the next day—24 hours. The bowels didn't move. She had constipation, vomiting, the acute sudden pain in the epigastrium and collapse, cardinal symptoms of acute pancreatitis. When I saw her these were the conditions. In addition to that there had developed considerable abdominal distention. There wasn't much abdominal tenderness, but I attributed that to the morphine. I made the diagnosis of acute pancreatitis and operated immediately, made a high incision, opened the peritoneum and found blood. This seemed to confirm the diagnosis. After a hurried exploration of the pancreatic neighborhood, however, I was not so sure of the source of the bleeding. Before I could satisfy myself the patient went into collapse and died on the table. At autopsy there was found no trouble with the pancreas, but we did find strangulation of the small intestine by a band.

ERNEST L. HUNT, M.D., F.A.C.S., Worcester (closing). I feel under obligation to Dr Lahey for expressing the situation as regards the lack of liver glycogen better than I did. It has been shown that any severe operation will rapidly exhaust liver glycogen, and I feel that preparation with glucose before any severe operation is an important thing.

I think the point established by Thalhimer and his co-workers is an important one to bear in mind. The rapid administration of glucose without insulin is followed by a rise in the glucose content of the blood, a hyperglycemia, which is succeeded by a rapid drop to a situation of hypoglycemia, apparently due to over-production of insulin. By the slow administration of glucose, taking perhaps an hour or an hour and a half to administer 50 grams, that sharp rise and fall is less, but by adding the insulin to the glucose solution in the proportion of one unit to every three grams of glucose the rise in the blood sugar is slight and runs along for a longer period with a less abrupt fall.

If experience supports Thalhimer's observations his method would seem to be the one to follow.

## RADICAL PELVIC SURGERY\*

BY HENRY T. HUTCHINS, M.D., F.A.C.S.†

UPON looking over my records for the past five years in order to find out in what direction my surgery was changing, if any, in

comparison with the previous five years, I came upon a rather unexpected and interesting situation, at least a situation which required some explanation. The result obtained by this review was in brief this—That during the past five years, without any premeditated plan on my

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†For record and address of author see This Week's Issue page 645.

part, I found, that in the realm of pelvic surgery in women over forty years of age, I was doing decidedly more panhysterectomies and decidedly less plastic operations and suspensions and fixations. In other words, my pelvic surgery had become much more radical than it had been during the previous five-year period. I had not consciously realized that this change was taking place so I sought to review my work in order to find out why I had become more radical, and whether or not the results justified my continuing along the same lines. Why more panhysterectomies and fewer suspensions and fixations?

I want first to clearly define the limits within which the discussion in this paper will be confined. I have ruled out of this discussion all cases where a panhysterectomy is clearly indicated if any surgery at all is done. All cases of carcinoma of the pelvic organs wherever located have been ruled out as nothing less than a panhysterectomy would be considered in such cases. Also all cases of extensive inflammatory disease where complete removal of the uterus would naturally be performed in order to effect a cure. In other words all cases where a panhysterectomy would without question be performed, where no choice was present, these cases do not concern this discussion. Also it should be clearly understood that no case under forty years of age has been considered, for in most cases of disease occurring in women under forty the question of conservation must be present. The discussion limits itself then to cases of women forty or more years old who need pelvic surgery and where the opportunity to do so-called conservative surgery is present and it is the surgeon's choice whether in his judgment conservative or radical surgery will be of the most lasting benefit to his patients.

To cite a concrete example. A healthy woman of from forty to fifty years of age, the mother of two or more children, normal menstruation still present, has a complete prolapse of the uterus, for which she must have surgical relief. What type of operation is the wisest one to perform in order to cure this woman permanently and with the least possibility of her ever having to have any further pelvic work done, either for recurrence of the prolapse or the relief of a subsequent carcinoma of either fundus or cervix or any other pelvic growth or inflammation? Shall a fixation of the fundus with repairs of the lacerations be done, or some form of interposition operation, in either case leaving the uterus in the body, or shall a panhysterectomy be performed completely removing the fundus and cervix, and at the same time a proper suspension of the relaxed vaginal walls? Either of these two procedures will cure the patient temporarily but which operation, in a large series of cases, will result in the complete relief from further pelvic disease of any kind?

The review of my work shows that I have become more and more inclined to perform a panhysterectomy in this class of cases in women over forty than I had previously done. By way of parenthesis I must explain my use of the term panhysterectomy. By panhysterectomy as used in this paper, I refer to the complete removal of the entire uterus, fundus and cervix. This does not mean the removal of any ovarian tissue. It means the removal of the entire uterus alone. If ovarian tissue is removed that fact is separately noted in the terms describing the type of operation. The crux of the situation is then, shall we remove the entire uterus without reference to the ovaries, more often under the conditions described above, or not? Will we greatly reduce the chance of further trouble by so doing or not? Can this be done with as low a mortality and morbidity as is present with the more conservative type of operation?

There are many factors which must be considered in a discussion of this problem.

1—The effect of the removal of the uterus after forty.

2—Can most conditions be cured as well after the uterus is removed as they can by using the uterus in the operation?

3—Is the risk greater if the uterus is removed?

4—Is the permanent benefit to be obtained by removal of the uterus sufficient to warrant this procedure being employed more generally than heretofore?

1—Opinions will undoubtedly vary on the effect of removal of the uterus previous to the menopause. Some claim that the uterus has a distinct hormone or internal secretion which is of certain benefit to the general organism. That this hormone is secreted most during menstruation and the loss of this function by the removal of the organ is somewhat detrimental. This, however, is at the present time far from proven. Thousands of uteri have been removed at all ages and for all causes but no definite bad results appear from the loss of menstruation provided ovarian tissue can be conserved.

The psychic effect of the loss of the uterus must be considered. The knowledge that the womb must be removed and that no further menstruation will be visible comes as a shock to many women. Not as much of a shock now as formerly. The public has already been very well educated, chiefly by the cancer propaganda, so that women now know that after forty the womb is decidedly a potential source of serious disease. Provided the question of pregnancy after forty does not enter in most women would be glad to be relieved of this source of trouble. The question of a desired pregnancy of course alters the entire situation. The only real function of the uterus as far as is known at present

is that of carrying and expelling the child. Under proper conditions its removal has little or no effect on the general organism. It is certainly one organ in the body the loss of which at a proper time is attended with no loss of body function and yet it is also one of the organs most susceptible to disease, especially cancer. I dare say that if the gall-bladder were as susceptible of cancer as is the uterus after forty many gall-bladders would be removed as a prophylactic measure.

2—Can most conditions be cured by removing the uterus as well as they can by using the uterus in the operation? The difficulty of curing many of the relaxed pelvic conditions by any operation is apparent when we consider the number of operations proposed for this work. In practically all operations of this type something is done to prevent a pregnancy occurring either by ligating the tubes or some other procedure. Whatever the operation as long as the uterus is left in the body a definite source of future trouble is present. I need not here review the statistics showing the increase in uterine cancer. This fact is too well known. The difficulty of curing an intractable leucorrhœa without removing the cervix is well known. In fact after the age of forty so many disagreeable and serious symptoms are present that the uterus fundus and cervix does cause a real menace. There are very few cases of pelvic relaxations etc., that cannot be cured as well at the time of removing the uterus as by an operation which conserves the uterus and uses it to form part of the pelvic support.

3—This brings us to the question of the risk to the patient involved in the two procedures. Is the risk greater in doing a panhysterectomy than in doing an extensive repair with fixation or the interposition operation? I must again define my use of the term panhysterectomy. I do not mean a wide dissection of the pelvic structures as in the operation for carcinoma nor do I necessarily include the removal of either tube or ovary. I mean the simple removal of the entire uterus without any lateral dissection of the parametrium or interference with the ureters or bladder, the closure and support of the pelvic floor by bringing together the broad and round ligaments and filling the cul-de-sac with the sigmoid flexure. I have not found this operation to consume more time nor entail more risk than either the interposition operation or the combined operation of extensive repairs plus an abdominal fixation and whatever else has to be done by the abdominal route. In fact the time of the operation is shorter than in many of the combined procedures there is less loss of blood and no more shock. The convalescence is fully as rapid.

4—As to the benefits to be obtained I believe them to be greater following the complete removal of the uterus. If surgery is indicated, and the abdomen is about to be opened either

through the vagina or by the abdominal route we have in this selected group of cases an opportunity to relieve our patients of an organ which has ceased to be useful, is of no further benefit to the individual, can be spared without loss of any necessary physical function and above all of an organ full of potential trouble during the remaining years of the individual's life. If its removal created a much greater risk, it would be inadvisable. In the hands of a surgeon fully familiar with the technique, and if done in a properly conducted clinic, neither the morbidity nor the mortality should be increased. The gain to the patient is evident. In these days of strenuous cancer propaganda, I am frequently asked by the patients themselves, when an operation for pelvic trouble is advised, whether the uterus would not best be removed to avoid the possibility of cancer occurring. So far has our propaganda progressed! The disinclination and the fear involved in the loss of the womb has largely disappeared. Especially is this so if the patients can be assured that ovarian tissue will be left.

There is one more condition for consideration in the cases of hysterectomy for fibroids. I believe in the majority of cases we should abandon the operation of supra-vaginal hysterectomy for that of panhysterectomy. This may be performed in either of two ways, either by removing the entire cervix with the fundus or by reaming out the entire cervical canal, leaving no trace of cervical glandular tissue. In this way we will avoid those unfortunate accidents which occur when the uterus is cut across at the level of the internal os only to find, perhaps at the time, and perhaps later, that an unsuspected adeno-carcinoma has been present in the fundus along with the fibroids. This has happened to many of us, I am sure, more than once.

I trust that no one has gained the impression from this paper that I believe in the wholesale removal of the uterus in all women over forty. I have tried to make it clear that I do not. I do think, however, that the time has come for us to seriously consider the place of more radical surgery when surgery is indicated, in these particular cases, that instead of doing more fixations and interposition operations, we should consider doing more panhysterectomies when it is necessary to operate at all on women who have passed forty or forty-five years of age. We are dealing with an organ where this is safely possible. We can at least in many cases remove all danger and fear of cancer, and until someone tells us how to either prevent cancer or how to cure it, everything should be done to prevent its occurrence in as many women as we can.

#### DISCUSSION

STEPHEN RUSHMORE, M.D., F.A.C.S., Boston  
I shall discuss this subject from the point of view of the limits imposed in the paper, and then if time permits, from the point of view of certain

aspects not comprehended in the content of the paper, but falling within the scope of the title

The thesis of the paper is that in women of 40 or more in whom surgical procedures are indicated for pelvic disturbances because of injury following childbirth, because of myomata, or because of any other non-malignant condition, the uterus should be removed in nearly every case. With this I am in agreement, in general, but there are certain qualifications I should like to make

The first qualification is in the matter of age. Instead of the "women over 40", I would say "women from 40-55" because this period represents a period of unstable equilibrium for the pelvic organs, and during this period cancer is likely to develop, and I make this statement in spite of the statistics which Dr. Wilkins showed yesterday in which in more than half of his series, cancer occurred after 50. His figures are not in agreement with other statistics on carcinoma of the cervix, most cases of which occur before 50. The possible significance of this variation I shall not go into in detail at this time, but variation in statistical conclusions may be due to the small numbers in consulted series.

Prolapse is most likely to develop between the ages of 40 and 50. Childbirth occurred years before, injury was produced years before, and with the on-coming years it gives symptoms of which the patient complains, so we speak of this as a period of unstable equilibrium, and following this, a period of stable equilibrium is reached which will be about the same for years until the patient dies.

The reason for this qualification is that to my mind after the age of 55, certain other operative procedures can give a satisfactory result and are to be preferred to panhysterectomy, for example, in certain cases of slight degree of prolapse of the uterus with or without much cystocele, the interposition operation gives good results which it would not give in a woman of 42.

Another type of operation which can be employed in cases of prolapse without extensive abdominal operation is one in which we employ partial obliteration of the vagina either by lateral dissection so that the vagina is narrowed down to a single canal, or the LeFort operation, in which there is a median denudation of the anterior and posterior vaginal walls, giving after closure two narrow lateral canals.

Another type of operation which may be employed in prolapse in women not likely to be very active, is a fixation of the uterus to the anterior abdominal wall. The uterus is pulled up and quickly incorporated in the abdominal wall with non-absorbable sutures. In women over 55 this gives good results, but it should not be done in women of 40.

There is another point in the paper on which misunderstanding might arise, and that is in regard to panhysterectomy as a substitute for

other types of operation. It can hardly be regarded as a substitute for plastic operations. Nothing can take the place of these in most cases. Generally we have to add plastic operation from below, to panhysterectomy.

Now the other aspect of this radical pelvic surgery which I want to speak of and which Dr. Hutchins specifically omitted is the consideration of inflammatory disease in the pelvis, acute or subacute inflammatory disease in the pelvis. Pelvic inflammations constitute a group different from intraperitoneal inflammations in other parts of the abdominal cavity. This latter group is nearly always perforative in character. This is not true in general of the pelvic infections. In the upper abdomen, for example, principles which we must follow are to get in as quickly as possible, to get out as quickly as possible, and to do as little as possible. It is much better to have a patient who is partially disabled to operate on later than to terminate the disease by a fatality at operation.

Now as a matter of experience this latter group of patients do well, or die, if operation is prompt, and secondary operations are not frequent. Experience with pelvic work indicates that many of the pelvic cases with operations in the acute stage need later operations, if we try to forestall secondary operations by trying to do fairly complete removal of tissue in the acute stage, we get an appalling number of catastrophes.

So the principles which apply in upper abdominal work do not have the same appropriateness in lower pelvic operations. Therefore, what we must do in pelvic conditions in the acute or subacute stage is to put off operation as long as possible, as perforation rarely occurs. In these cases we avoid operation as far as possible, then if operation is necessary later, that is the time to do a radical operation. If we find a double pyosalpinx, it is not enough to take out the tubes. What we ought to do is to remove all the pelvic tissues connected with the uterus and tubes that we can get out. If we can do a complete operation, so much the better.

I am very glad that Dr. Hutchins has emphasized at this time the need for radical pelvic surgery under certain conditions.

GEORGE C. WILKINS, M.D., F.A.C.S., Manchester, N.H. Just what does constitute a precancerous uterus? It is a question that has been the cause of considerable discussion frequently, and I cannot feel that because there is some pathology in the uterus that that uterus is necessarily precancerous. The term is too loosely used altogether, and too many radical operations are performed on uteri with that for an excuse. On the other hand I agree with Dr. Hutchins in the advisability of radical surgery on the uterus in conditions he described. I am glad Dr. Rushmore brought out the point I had in mind, that the uterus which has become atrophied and small,



is that of carrying and expelling the child. Under proper conditions its removal has little or no effect on the general organism. It is certainly one organ in the body the loss of which at a proper time is attended with no loss of body function and yet it is also one of the organs most susceptible to disease, especially cancer. I dare say that if the gall-bladder were as susceptible of cancer as is the uterus after forty, many gall-bladders would be removed as a prophylactic measure.

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#### DISCUSSION

STEPHEN RUSHMORE, M D, F.A.C.S., Boston  
I shall discuss this subject from the point of view of the limits imposed in the paper, and then if time permits, from the point of view of certain

The comment is often made that eczematous lesions and psoriasis will return following X-ray treatment. That is true, but is it not also true that these diseases return following the use of topical remedies? Often a single, sub intensive dose of X-ray will completely eradicate a relapse in these conditions. Acute types of eczema do not do well under X-radiation. I have personally treated a psoriatic patient with periodic relapses who responded promptly to X-radiation and to nothing else. This patient had a generalized eruption of the back, shins and forearms. He received treatment over the forearms and shin with the remainder of the body carefully protected by lead rubber. Following his treatment, his eruption on the back disappeared. This "distance" effect reported by Fox, Sibley and others, Mackee states he has not seen in several hundred cases treated.

In *lupus erythematosus*, the feeling is that the unfiltered Beta radiation of radium sufficient to produce a sharp reaction is preferable to X-radiation. Recently I have seen two cases of lupus referred by the dermatological department resistant to ultra-violet radiation, refrigeration and X-ray therapy, that did surprisingly well under desiccation. Centrally these lesions had cleared but at the edges were serpiginous. These edges were desiccated and healed cleanly and promptly. These cases have been followed now for a period of six months, without evidence of recurrence. Of course it is known that both the discoid and disseminate type of lupus may disappear spontaneously.

Since January 1, 1926, thirty-seven cases of *cellulitis* and *chronic abscess* have been radiated in my department at the Boston City Hospital. The cellulitis cases did not come to open incision and the convalescence of the chronic abscess cases was shortened. They averaged three X-ray treatments each, in a period of ten days to two weeks.

Sixty-seven cases of *paronychia* were treated, either by X-ray or radium. Those that had no bone involvement responded promptly to radiation.

Ninety-three cases of *furuncle* have been treated successfully over the same period of time, without surgical interference. Twenty per cent of these occurred on the neck posteriorly, five per cent on the upper lip, five per cent on the chin and the remainder distributed as follows: auditory canal, nose, face, and forearm. The majority had no other treatment but X-rays. Several of the furuncles that occurred on the posterior part of the neck were in women, a side-light on the current vogue for bobbing. These women had had their necks shaved, with consequent infection. Judging by the number of physicians and nurses treated, the profession apparently has confidence in the method, but often forgets to prescribe it for others.

Forty-seven cases of *carbuncle* were treated in

conjunction with surgery without a death. The diagnosis of furuncle or carbuncle was not made by the radiation department, but by the surgical service referring the patient, and the statistics are based on this. Pain in these conditions is relieved in six to twenty-four hours after radiation and the pathology changes rapidly, usually within two days an ulcerating, sloughing carbuncle resolving into a large central abscess, which often drains spontaneously and heals promptly.

*Basal cell epithelioma*, if seen early, appears to do equally well either with surgery, X-ray treatment, radium or electro coagulation. The squamous cell type of epithelioma is the one that metastasizes and calls for greater discretion of judgment in treatment. In either case X-radiation of the regional lymph-nodes should be carried out. If the lesion is extensive and inoperable, there is nothing left but X-radiation and radium, although electro coagulation can be used with good results in many apparently inoperable lesions. If radiation is indicated, one versed in therapy only should treat cutaneous malignancy. I have seen cases treated by repeated exposures to a radium plaque which, when referred, were genuine radium ulcers. An epithelioma that does not respond to at most two treatments of radium has been treated inadequately.

*Thyrototoxicosis*. There appears to be no question but that surgery in the hands of the specially trained thyroid surgeon is the most certain cure for this disease. The permanency of the cure, the cosmetic effect and the shortened convalescence, all favor surgery. No radiation therapist should attempt therapy in a patient suffering from thyrototoxicosis until the patient has been fully apprised of the relative merits of surgery and radiation. If the patient makes the choice of radiation freely, X-radiation or radium may be employed. The basal metabolic rate should be determined at frequent intervals during, at the close of, and long after the termination of radiation, in order to estimate the stability of the cure. Of fifty-four cases referred to my office in 1922 and 1923 for X-ray therapy of supposed thyrototoxicosis, only eighteen showed a basal metabolic rate to justify the assumption of hyperthyroidism. Three of these cases were recurrences after inadequate surgery. Of the remainder, five showed a rate minus twelve to nineteen, consistent with myxedema. Two of these were post-operative end results. Of the eighteen cases treated by X-radiation, five came to surgery with complete clinical cure and cosmetic benefit. The others, followed over three years, have been free from clinical symptoms. Exophthalmos disappears but slowly. Blood pressure and pulse rate fall more quickly. Mortality is nil. This group of cases is small, yet large enough for certain generalizations, namely that exactly two-thirds of the cases referred for

the light intensity is reduced below the optimum, it may become the limiting factor

The choice of which agent to use should depend on the lesion to be treated and not on the kind of radiation available. The roentgentherapist without radium will continue to try to cure by X-rays whatever condition presents itself, and vice-versa. They are of equal value in many superficial conditions. In some cases, radium is to be preferred because of the ease of handling and applicability. Both should be at hand. Ultra-violet radiation is a necessary adjuvant.

Ultra-violet light is usually produced by the uviarc or carbon arc. The uviarc is a mercury vapor lamp of quartz. Quartz is used since any other type of glass would absorb all the useful ultra-violet radiation. These quartz lamps are marketed in two types of burners, air cooled and water cooled. The air cooled is designed for radiation at a distance, to obtain the systemic effect, the water cooled, for surface application. The carbon arc uses no lamp and is an air burner. The quartz lamp is reputed to give a greater intensity of ultra-violet radiation than the carbon arc, for which, in turn, precedence is claimed because its spectrum more nearly approaches natural sunlight.

Unfortunately, for many years these lamps have been offered to the profession under trade names, and little or no careful effort has been made to check alleged beneficial results reputed to them. It appears established that the water-cooled quartz lamp is germicidal. The systemic effect of radiation from the air cooled uviarc or carbon arc is rather generally accepted. Its effect in rickets and bone tuberculosis is well known.

Besides these forms of radiation, certain kinds of electrical currents that produce thermal effects are often useful in the treatment of superficial lesions.

For the removal of new growths of moderate size, a monopolar high frequency current, (Oudin) may be employed. The heat produced is conducted to the lesion by a stout needle or other pointed applicator. The current is so regulated as to produce heat of just sufficient intensity to dessicate or dehydrate the tissues, hence the name, *dessication method*, as opposed to *electrocoagulation*, wherein is employed a bipolar high frequency current of low voltage and high amperage, which is more penetrating and intense than dessication and is used to destroy larger growths.

Electrothermic methods are peculiarly adapted to the treatment of localized malignant growths occurring in any part of the oral cavity. Clark of Philadelphia warns that these can be best used only by those who have had surgical training and experience and should be utilized alone only in localized tumors of a type which do not tend to metastasize and that the efficiency of these electrothermic methods is increased by

the judicious combination of operative surgery, radium and X-ray.

Electrothermic methods are eventually surgical in their method of cure. The lesion is destroyed by conducted heat in contra-distinction to radiation, which appears to exert a biological effect through the blood and lymph systems.

One word about the "radio knife," a trade name also "High frequency knife" or "cutting current" are more descriptive terms. Kelly has suggested "acusector." To produce a bipolar high frequency current certain manufacturers employ valve tubes such as are used in radio sets (hence radio knife) to amplify the oscillations, so that the current at the active electrode is relatively a continuous cold spark and may be used for cutting tissue after the fashion of a knife. It is a surgeon's tool only and is useful for wide and deep dissections. It is reputed to seal off blood vessels while cutting and so prevent metastasis. If a genuine "cold" cutting current is used, healing by first intention will follow. If a "cooking" current is used, which is necessary to seal off large vessels, healing by first intention will not occur.

I have mentioned this high frequency knife here because of inquiry received from a consultant in regard to its use in the removal of tattoo marks. It has an alluring name for patient and quack. Its usefulness is strictly limited to the field outlined above.

Great care must be taken when using these electrical currents in the presence of an explosive anesthetic. I have recently seen two patients burned when desiccation and electrocoagulation were attempted in the mouth while the patient was receiving respiratory ether. Rectal or local anesthesia only should be employed.

Briefly I will outline the kinds of superficial lesions in which I have employed phototherapy or electrothermy with some success. There is a large group of skin conditions (some eighty listed by Mackee and Andrews) that are amenable to radiation, in some twenty-seven of which X-radiation offers the sole means of establishing a permanent cure with a reasonable degree of certainty.

In *acne*, a combination of X-rays and ultra-violet radiation has given me the best results. Treatments are given using the air-cooled lamp every other day until pigmentation of the skin occurs. Individual pustules should be expressed and exposed to the water cooled lamp. If ultra-violet radiation does not accomplish the desired result, then I employ X-rays, utilizing Mackee's technique of a sub-intensive dose divided into sixteen treatments over a period of four months. Radiation does not release the patient from adhering strictly to the accepted dietary and hygiene recommended for this condition, often the determining factor in successful treatment.

I do not know of any remedy so efficient in the treatment of *chronic eczema* as X-radiation.

show fibrosis with infiltration of both bases, following X-ray treatment has remained relieved of asthmatic attacks

R. L., age 8, No 1642, an asthmatic since two months old, after six X-ray treatments has remained symptomatically cured

Treatment in these cases has been directed to the lung fields and the spleen. We know that small doses of X-rays or radium produce a polymorphonuclear leukocytosis and heavy amounts of radiation produce a leukopenia. X-radiation has a definite analgesic effect in neuritis. Whether or not it affects the phrenic directly or indirectly in these asthmatic cases is not known. Not to overstate the matter, the fact that stands out is that there is a certain group of bronchial asthmatics definitely benefited by X-ray treatment.

It may be objected that enough comparative statistics of cases have not been reported to warrant any definite conclusion. Belloc, in a little essay on the hatred of numbers wrote, "The whole argument against the abuse of statistics is summed up in the story of the man who explained what an average was. 'If you were struck dead by lightning at my side, and I remained safe and sound, we should both be on the average, half dead.' " The truth is no one would think of accepting statistics against his

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I do not think radiation therapy is a panacea. There is no question but that it may do incalculable harm in the hands of the inexperienced. I would like here to protest strongly against the commercial policy of supply houses, installing ultra-violet lamps in clubs, gymnasia and homes not under the direction of a physician. It has been established that general ultra-violet radiation can light up unsuspected phthisis, that debility and depression follow too frequent or too lengthy application.

If the unqualified shall persist in using radium, X-ray and ultra-violet radiation, without a knowledge of phototherapy, we shall see a revulsion such as we experienced in the early part of this century against all forms of electrotherapy. Radiation therapy is not something that can be learned from an advertisement or a salesman's talk. It should not be practiced without an intensive study of the physics of light and the biological effect of radiation in general. Then each patient, each disease, must be treated as a distinct entity. When this is appreciated, then will radiation therapy be lifted up out of its present realm of uncertainty into its proper sphere of unquestioned value in therapeutics.

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The sample collected represents 57.4 per cent of the population of Shelburne and 25.5 per cent of the population of Buckland. The failure to get a more complete sample in Shelburne was due largely to the fact that many families were away at the time of the survey. The one obtained, however, is believed to be representative of the community. The size of the sample is such that many of the items included in the Win-

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Records were obtained on 1278 individuals. A census of the surveyed population is shown in Table I.

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During the year preceding the survey 553 individuals were reported as sick or 43.3 per cent of the surveyed population, as compared with 32.4 per cent in Winchester. About one fourth of those sick had more than one illness during the year. 455 had one illness, 82 two illnesses, 15 three illnesses and one, four illnesses. On a

Massachusetts Department of Public Health  
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X-ray treatment were not suitable for it, that myxedema and even hyperthyroidism occur after surgery, that allowing for spontaneous cure and the effect of rest in bed, nevertheless a large percentage treated by X-rays remained clinically well so that while the method is time consuming, it is not without merit.

**Tonsils** I have treated thirteen cases of hypertrophied tonsils by X-ray therapy. I have not used radium, because as far as I have been able to observe, large amounts, as much as fifty milligrams of the element or a corresponding amount of emanation, should be applied to each tonsil area over a period of twenty-four hours. This makes it a costly treatment, and besides ties up a large amount of radium, which I prefer to have available for malignant disease. X-rays in sufficient quantity to produce alleviation of symptoms and often reduce the size of the tonsils can be administered in a matter of minutes as opposed to hours for radium. I say *often* reduce the size of the tonsil advisedly since it is common experience that the hypertrophied tonsil sometimes overnight decreases in bulk, following any and no local treatment.

Witherbee at the Rockefeller Institute for Medical Research first treated a case of hypertrophied tonsil in December, 1919, and soon after did a series of cases. He stated that in the tonsils excised after X-ray treatment by him the cells of the lymph follicles of both the lymphoid and fibroid tonsils had been destroyed. A bacteriological report of a few cases showed negative cultures for pathogenic bacteria. Various roentgenologists, among them Butler and Waters, have tried to duplicate Witherbee's results but have not had his reported success.

A purulent tonsil should be excised. If you accept the supposedly immunizing function of the tonsil, you may treat by radiation that group of hypertrophied tonsils not excessively reddened, which suggest by their appearance a minimum bacterial activity. My own feeling is that until further study, it is unwise, if not prejudicial, to recommend radiation of tonsils in place of surgical removal, except in cases of diseased tonsils and infra-tonsillar lymph-nodes associated with chronic endocarditis, pericarditis, hemophilia or any co-existing condition which contraindicates operation or an anesthetic.

Fulguration of hypertrophied tonsils is practiced now and in the hands of an expert like McFee may be a method of choice. An especially long and powerful high frequency spark is used. If not adequately done, fulguration amounts to surface cauterization, which is comparable to the ineffective guillotine operation of surgery.

Where certain other lymphoid structures are involved, as in cervical adenitis, enlarged thymus, mediastinal and tracheo-bronchial adenitis, whooping cough and asthma, radiation over a wide range of wave lengths will alleviate symptoms and reduce the size of the glands.

Whether or not all cases of supposedly enlarged *thymus* are in reality such, or are tubercular glands, is beside the point. If these cases improve clinically after radiation, then it follows that we have at hand a valuable agent for the alleviation of symptoms referable to the superior mediastinum. The cases of "broadened mediastinal shadow" as diagnosed by roentgenogram and treated by me during the past year were ninety-eight in number.

Following X-ray treatment, those most probably thymic showed a marked decrease in the area of density, seen on the roentgenogram, with cessation of symptoms when present. Those most probably representing a tubercular mediastinitis showed little or no decrease in the size of the mediastinal shadow as registered on the roentgenogram.

In infants, radium is used because it can be fastened securely to the subject and immobility of the patient is not of such moment as during X-radiation. To older children, who will remain quiet, X-rays are administered, with a great saving in time.

Seventeen cases of *whooping cough* have been treated privately following Leonard's technique as developed at the Onshore Clinic of the Boston Floating Hospital. In only one case did the mother state she could see no improvement. In the remaining cases, both physicians and parents stated that there had been a marked decrease in the intensity and number of paroxysms and a production of a softer cough. Some believed that the course of the disease had been shortened, while it was unanimous that the course had been made less distressing to all concerned.

Since January 1, 1926, twenty-five cases of *asthma* have been treated by me at the Boston City Hospital by X-radiation and many relieved symptomatically for the longest period in their lifetime. These cases were all so called chronic bronchial-asthma. The majority were not protein sensitive, although a few sensitized cases which did not respond to vaccine were benefited by X-radiation. Chest roentgenograms were made in all cases, which for the most part showed chronic fibroid changes in the lung fields. One case diagnosed bronchiectasis, suffering from asthmatic attacks, was definitely relieved following X-radiation.

M. T. No 1020, had used three hundred bottles of adrenalin in four years prior to her X-ray treatment. Following five X-ray treatments there has been no asthmatic seizure in two years.

M. B., age 40 No 1096, came to the radiation department with a history of having had no appreciable relief from asthmatic attacks over a period of two years in which she had used adrenalin constantly. She has been free of attack since her X-ray treatments for one year and a half. She recently returned to the clinic with an acute bronchitis secondary to coryza. Despite her acute pulmonary condition she remained free of her asthma.

P. W. age 10 No 1334, a sufferer from asthma for two years, and whose chest film was reported to

show fibrosis with infiltration of both bases, following X-ray treatment has remained relieved of asthmatic attacks

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SHELBURNE BUCKLAND

Age	Males	Females	Total	Per Cent Shelb	Survey Winch	Per Cent State Federal Census 1920
0 5	52	69	121	9 47	10 7	12 00
6 15	121	77	198	15 48	18 5	18 00
16 25	74	88	162	12 67	15 9	16 20
26 35	87	80	167	13 06	14 1	16 90
36 45	83	85	168	13 15	14 3	14 00
46 55	76	88	164	12 84	12 2	11 20
56 65	53	79	132	10 32	8 1	6 80
66 75	50	67	117	9 15	4 1	3 70
Over 75	18	27	45	3 52	1 7	1 20
Age Not Stated	2	2	4	31		
Total	616	662	1278			

TABLE II  
PERCENTAGE OF SICK INDIVIDUALS BY NUMBER  
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	One Ill	Two Ill	Three Ill	Four Ill
Shelb Buckland	82 2	14 8	2 7	2
Winchester	82 0	14 8	2 8	1

percentage basis a comparison between these findings and those of Winchester is very similar

During the period June 1, 1926-June 1, 1927, covered by the survey, 16 residents of Shelburne and 25 residents of Buckland died. These cases represented morbidity during the year but were not included in the tabulation of the survey. In

TABLE III  
MORBIDITY IN SHELBURNE BUCKLAND

Diseases	Mortality S B		Weighted Mortality Rate per 1000	Morbidity in Survey	Crude Morbidity Rate per 1000 in Survey	Crude Morbidity Rate per 1000 Shelb Buckland	Winchester
Pneumonia	1	1	65	5	3 9	4 6	6 6
Tuberculosis		3	60	1	8	1 4	2 1
Other Respiratory	1		45	83	64 9	65 4	151 9
Aden and Tonsils				4	3 1	3 1	8 5
Other Operations				14	11 0	11 0	4 6
Infections		1	20	95	74 3	74 5	41 2
Cancer	5	1	2 45	3	2 3	4 8	3 1
Nephritis	1	1	65	15	11 7	12 4	4 2
Apoplexy	2	3	1 50			1 5	2 7
Heart	4	8	3 41	27	21 1	24 5	16 0
Stomach				27	21 1	21 1	18 7
Intestines	2		90	25	19 5	20 4	13 7
Rheumatism				29	22 7	22 7	20 8
Nervous Diseases				53	41 5	41 5	16 7
Female Genitals				10	7 8	7 8	3 9
Childbirth		1	20	19	14 9	15 1	9 9
Tired Feeling				11	8 6	8 6	3 6
Accidents				33	25 8	25 8	12 8
Swelling				4	3 1	3 1	*
Pain				8	6 2	6 2	*
Others		4	81	21	16 4	17 2	49 2
Diabetes				2	1 6	1 6	1 6
Convalescence							*
Chronic Invalid				10	7 8	7 8	3 4
Adenitis				1	8	*	1 5
Ill-defined				34	26 6	26 6	*
Mental				4	3 1	3 1	1 3
High Blood Pressure		2	40	15	11 7	12 1	6 3
Total	16	25	12 2	553	433	445	408 5

\*No rate computed where the crude morbidity rate is less than 1 0 per cent

order to obtain the correct morbidity rate the mortality rates have been added to the morbidity rates with such adjustments made as the size of the sample warranted. A weight of 57.4 per cent. was given to the Shelburne deaths and of 25.5 per cent. to the Buckland figures.

While the number of cases of many of the illnesses is too small to be statistically significant, it is interesting to compare the Shelburne-Buckland rates with those of Winchester, and to note the similarity. The respiratory diseases have higher rates in Winchester than in Shelburne-Buckland, this is probably a real difference between rural and urban communities. Infectious diseases give a higher rate in Shelburne-Buckland than in Winchester, this is due, however to an unusual prevalence of whooping cough and chicken-pox in Shelburne-Buckland in the period of the survey. Over a long period of time there are only slight differences in the infectious disease rates of these two places (Table VIII).

Cancer, nephritis, heart disease, rheumatism, nervous diseases, and chronic invalidism show higher rates in Shelburne-Buckland than in Winchester. While some of these differences are not significant statistically they reflect what would be expected as Shelburne-Buckland has an older population than that of Winchester.

In Shelburne-Buckland the rates for ill-defined diseases, pain and swelling exceed those of Winchester. This is confirmatory of the findings pointed out in a previous article<sup>2</sup> that there are slight differences in diagnosis and certification between the rural and urban communities.

The incidence of the diseases is too small to make adjustments for age and sex, and it is necessary to use total diseases when dealing with these items. Table IV gives the morbidity as found in the survey for total diseases by age and sex distribution and makes comparison with the sex ratio found in Winchester.

With the exception of the two lower and the

highest age groups the females have higher morbidity rates than the males. In Winchester this ratio occurred in all age groups. In the Shelburne-Buckland survey the differences between the female and the male rates are not statistically significant in many of the age groups due to the small sample. For all age groups together the difference is significant and confirms both the Winchester findings and those of Sydenstricker in the Hagerstown study.<sup>3</sup> When childbirth and diseases of the female genitals are omitted there is still an excess of female illnesses, the ratio being 1.11. The ratio of the death rate among females to that among males in Shelburne-Buckland for the past twenty-three years is .96. In Winchester this ratio was .97. The Shelburne-Buckland findings are confirmatory of the Winchester findings, that females have more sicknesses than males while their death rate is less. The relation between sickness and time lost is shown in Table V.

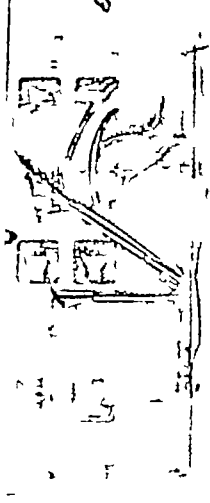
TABLE V			
TIME LOST THROUGH ILLNESS WAGE EARNERS			
Wage Earners	Total Days	Average Time	
Male	Lost	Lost	
112	1236	11	
Wage Earners	Total Days	Average Time	
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15	191	12.7	
Wage Earners	Total Days	Average Time	
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127	1427	11.3	

The average time lost among males (11 days) is in excess of that found at Winchester (6.3 days). This was largely due to the size of the sample and the fact that one individual was sick for nearly a year, making a high average. The female average (15 days) is far in excess of Winchester (2.5 days). Probably this, also, is due

TABLE IV  
MORBIDITY IN SHELburne-BUCKLAND BY AGE AND SEX  
(Rate per 1000)

Age	Morbidity		Morbidity		Ratio Morbidity Rate Females to Males	
	Males	Rate per 1000	Females	Rate per 1000	Shelburne- Buckland	Winchester
Under 5	24	461.5	13	188.4	.41	1.09
5-15	54	446.3	31	402.5	.90	1.07
16-25	14	189.2	28	318.3	1.68	1.15
26-35	24	275.8	40	500.0	1.81	1.34
36-45	21	253.0	42	494.3	1.95	1.33
46-55	30	394.7	42	477.4	1.21	1.34
56-65	19	358.6	54	683.6	1.91	1.44
66-75	28	560.0	50	746.0	1.33	1.39
Over 75	15	833.5	21	777.5	.93	1.21
Age not stated			3			
Total	229	371.6	324	489.4	1.32	1.24





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Both Sexes	Lost	Lost	
127	1427	11.3	

The average time lost among males (11 days) is in excess of that found at Winchester (6.3 days). This was largely due to the size of the sample and the fact that one individual was sick for nearly a year, making a high average. The female average (15 days) is far in excess of Winchester (2.5 days). Probably this, also, is due

TABLE IV

MORBIDITY IN SHELBURNE-BUCKLAND BY AGE AND SEX  
(Rate per 1,000)

Age	Morbidity		Morbidity		Ratio Morbidity Rate Females' to Males	
	Males	Rate per 1 000	Females	Rate per 1 000	Shelburne- Buckland	Winchester
Under 5	24	461.5	13	188.4	.41	1.09
5-15	54	446.3	31	402.5	.90	1.07
16-25	14	189.2	28	318.3	1.68	1.15
26-35	24	275.8	40	500.0	1.81	1.34
36-45	21	253.0	42	494.3	1.95	1.33
46-55	30	394.7	42	477.4	1.21	1.34
56-65	19	358.5	54	683.6	1.91	1.44
66-75	28	560.0	50	746.0	1.33	1.39
Over 75	15	833.5	21	777.5	.93	1.21
Age not stated			3			
Total	229	371.6	324	489.4	1.32	1.24

to the small number of wage earners in Shelburne-Buckland

Total illnesses were studied in relation to the economic status of the individual. The difference in illness rates in the various economic status was not as great as in Winchester.

As would be expected, it was found that diphtheria and scarlet fever were very well reported in both places. On the other hand, although the reporting of the five other diseases was poor in both places, they were three times as well reported in Winchester as in Shelburne-Buckland.

TABLE VI  
MORBIDITY RATES BY ECONOMIC STATUS\*

	Poor			Moderate			Comfortable		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Population Shelb Buck	370	410	780	173	179	352	27	31	58
Rate per 1000 "	308	405	369	369	369	369	259	516	396
Rate per 1000 Winchester	211	293	251	330	408	371	443	542	499

\*Cases NOT STATED as to economic status are omitted

There were no significant differences in the per cent of cases that employed physicians in the different groups in Shelburne-Buckland. Of the total cases of sicknesses 88 per cent employed a physician.

Whether this represents a constant difference in these two towns it is not possible to say.

Although the law requires that the householder shall report cases of communicable diseases, he almost never does. In only one year of

TABLE VII

PER CENT OF PHYSICIANS EMPLOYED BY ECONOMIC STATUS\*

	Shelburne-Buckland			Winchester		
	Male	Female	Total	Male	Female	Total
Poor	87.1	89.4	88.4	75.3	71.9	73.6
Moderate	90.1	86.6	88.2	77.9	76.4	76.7
Comfortable	88.4	88.2	88.8	80.6	80.8	80.7

\*Cases NOT STATED as to economic status are omitted

The contagious disease history of all individuals under 20 years of age was obtained for chicken-pox, diphtheria, German measles, measles, mumps, scarlet fever, and whooping-cough. Owing to the small size of the sample it was found necessary to study these in five year age groups. The following table shows the percentage of individuals who had had the various diseases prior to the survey, by their ages at the time of the survey. A comparison is made with similar figures from the Winchester survey.

There is a close similarity between Shelburne and Winchester figures for chicken-pox, diphtheria, and whooping-cough. Winchester had slightly more mumps than Shelburne, but less scarlet fever. In Winchester the measles rate was higher and the German measles rate lower than Shelburne-Buckland. Where German measles and measles are combined there is little difference between the two surveys. It is felt that these two diseases were often confused in both surveys.

Table IX compares cases of seven communicable diseases reported to the local boards of health of Shelburne-Buckland and Winchester with cases found in a survey of the two towns. The figures used represent, in each instance, a ten year average.

TABLE VIII

(1) CONTAGIOUS DISEASES IN SHELBURNE-BUCKLAND  
(Per cent who had the disease prior to the survey)

Age Groups	0-4 9 years	5 9 9 years	10 14 9 years	15 19 9 years	Total years
Population	122	98	90	84	394
Chicken pox	15.6	41.8	61.1	60.7	42.1
Diphtheria	0	2.0	4.4	8.3	3.3
German Measles	4.1	23.5	33.3	22.6	22.1
Measles	9.0	29.6	63.4	69.1	39.4
Mumps	1.6	10.2	18.9	35.7	15.0
Scarlet Fever	0.8	10.2	14.4	35.7	13.7
Whooping Cough	24.6	55.0	74.5	71.4	53.5

(2) CONTAGIOUS DISEASES IN WINCHESTER  
(Per cent who had the disease prior to the survey)

Population	918	909	862	676	3365
Chicken Pox	13.7	50.2	58.9	55.0	43.4
Diphtheria	0.4	2.6	3.9	7.0	3.2
German Measles	1.9	6.6	11.7	13.3	7.7
Measles	18.6	60.5	81.1	83.2	59.1
Mumps	5.8	27.0	38.4	42.2	27.2
Scarlet Fever	1.9	6.9	12.8	13.6	8.4
Whooping Cough	22.6	57.8	67.5	65.8	52.4
German Measles and Measles (Combined)					
Shelburne-Buckland	13.1	53.1	96.7	91.7	61.5
Winchester	20.5	67.1	92.8	96.5	66.8

the ten years have we figures on the percentage of cases of communicable diseases seen by physicians in the two communities. In Shelburne-Buckland about eighty-five per cent of the cases of communicable diseases occurring were seen by physicians, and in Winchester ninety per cent. If this is taken as a picture of what occurred in the other nine years, there is but one conclusion to be drawn, namely, that the physicians are not reporting to the local boards of health many of the communicable diseases of childhood.

An attempt was made to determine the hos-

pital facilities of Shelburne-Buckland by ascertaining the number of admissions to the Franklin County Hospital and the Farren Hospital, of residents of Shelburne-Buckland. Doubtless some individuals also went to hospitals in Boston, Springfield, or elsewhere. During the period covered by the survey, 93 residents of Shelburne-Buckland were admitted to the local hospitals. This comprised about 3 per cent of the population of the two towns, and varied from the Winchester findings by less than one-fifth of

- 3 The crude morbidity rate for all reported illnesses was 445 per thousand, the largest single group being colds and grippe with a rate of 65.4
- 4 Females have a higher morbidity rate than males, but a lower mortality rate
- 5 The economic status had little effect on either the incidence of the disease or the employment of physicians
- 6 Hospitalization appears to be adequate to the demand in Shelburne-Buckland

TABLE IX  
COMPARISON OF REPORTED CASES TO SURVEY CASES COMMUNICABLE DISEASES  
10 Year Average (1917-1926)

Disease	Shelburne Buckland			Winchester		
	Reported Cases	Weighted Survey Cases	Per Cent Reported	Reported Cases	Weighted Survey Cases	Per Cent Reported
Chicken pox	10	28.7	3.5	58.0	119.7	48.4
Diphtheria	2.6	1.4	180.0	11.0	9.2	119.6
German Measles	3.7	18.6	19.4	23.5	20.8	112.9
Measles	8.6	25.8	33.3	80.6	165.6	48.6
Mumps	0.4	9.9	4.0	39.7	74.8	53.1
Scarlet Fever	8.9	10.1	88.1	23.3	24.9	93.6
Whooping Cough	3.1	37.9	0.8	28.7	139.9	20.7
Totals	28.3	132.4	21.3	264.8	554.9	47.8

one per cent. The average length of stay was 13 days.

About 30 per cent of the child-births in Shelburne-Buckland were hospitalized compared with 63 per cent in Winchester. There were only two admissions for the respiratory diseases.

No attempt was made to study the nursing facilities in Shelburne-Buckland other than to interview the one visiting nurse who reported that she was extremely busy with bedside nursing and attended a large number of patients.

#### CONCLUSIONS

- 1 The population of Shelburne-Buckland is older than Massachusetts as a whole and has a slightly greater excess of females.
- 2 Of the group surveyed 43.3 per cent reported being ill an average of 1.2 times during the year.

- 7 The communicable diseases increase with the age groups up to the 10-14.9 group for chicken-pox, German measles, and whooping-cough, and up to the 15-19.9 group for diphtheria, measles, mumps, and scarlet fever.
- 8 The reporting of the communicable diseases in Shelburne-Buckland is poor.
- 9 The small size of the sample studied makes the results of value only for comparison with other studies.

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Acknowledgment is made of the services rendered by Mr. Milton L. Miller, who personally made a house-to-house canvass of Shelburne-Buckland.

## EPILEPSY AND PARKINSONISM\*

BY PAUL I. YAKOVLEV, M.D.†

IN the symptom-complex of epidemic encephalitis and its residuals, convulsions are by no means uncommon. The Danish neurologist, Professor Wimmer<sup>1</sup>, in a number of personal observations, has shown the occurrence of convulsions after a long lapse of time (eight years

in one case) following the initial infectious episode. He qualifies these convulsions as "Epilepsy in Chronic Epidemic Encephalitis."

Walshe<sup>2</sup> as well as several authors quoted by Wimmer (Cruchet, Guillaum, Bauer and Hedinger, Price, Stern, Grossman, Hall) have described epileptiform convulsions during the acute stage of epidemic encephalitis, or in the course of the first few months which follow it.

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†For record and address of author see "This Week's Issue" page 645.



I have seen two cases in which convulsions appeared within a very short time before the beginning of the acute stage. In these cases infection may have previously existed and, remaining latent, caused occasional convulsions.

Epileptiform convulsions, however, in the symptomatology of the active toxic infectious a somewhat special place. They belong to the symptomatology of the active toxic-infectious process in the central nervous system rather than to the symptomatology of the truly post-encephalitic residuals or sequelae.

If epileptiform convulsions are not uncommon in epidemic encephalitis, the Parkinsonian syndrome is, then, extremely frequent. This is a truly residual condition, a post-encephalitic sequel *sensu strictu*, analogous to tabes or hemiplegia in syphilitic meningitis or meningoencephalitis.

A condition developing only in more or less remote periods of the evolution of the original disease, remarkably stationary or only slowly progressive, desperately resistant to any causative treatment, the post-encephalitic Parkinsonian syndrome, as a true neurological sequel, is significant of structural destruction of neuronal elements with a highly specific function and with more or less definite localization, not only the function is abolished but the substratum itself of this function is destroyed.

It has been my privilege to examine neurologically the patients of the Monson State Hospital, and thereby I have been given an excellent opportunity to observe various types of epilepsy, not only from the point of view of its varied etiology but also from the point of view of the neurological evolution of epileptics in length of time. Thus, in the course of my examinations a special group of epileptics was gradually formed and stood quite apart among other types of this condition—that is, the group of patients with a more or less definite history of an acute general illness in the years 1918-1922 and who developed epileptiform convulsions within a more or less short lapse of time after the acute episode just referred to. In the majority of cases we had a definite contemporary diagnosis of "epidemic encephalitis" or "epidemic gripe" from the respective hospitals or physicians. In the other cases this acute episode, by its severity and duration, frequent involvement of several members of the same family, slow and difficult recovery, subjective symptomatology of the period of convalescence (diplopia, neurovegetative troubles, characteristic changes of personality) scarcely gives place for doubt about its nature.

I will limit myself to a discussion of the clinical histories of two cases of undoubted encephalitic epilepsy who developed later the neurological picture of Parkinsonism and showed an interesting relationship between this syndrome and convulsions.

#### CASE No. 1—Stephen M.—31

Nothing calling for remark in the family history in the remote personal history it is stated that he

was born at full term and was quite normal in development both physically and mentally. He had measles at four, mumps and scarlet fever at eight. At the declaration of war, when he was 20 years old, he joined the army and in 1918, when in a military training camp, he had severe influenza during an epidemic outbreak in his unit. He was sick in an Evacuation Hospital for about three weeks and had delirium during this time. His recovery was very slow and he was badly run-down. After his discharge from the hospital he was sent to the Development Battalion. About four years later, in 1922, he had his first spell. At first, as he described them, these spells were in the form of absences, "dazed spells" as he called them. Later came on convulsions with falling, biting of the tongue, involuntary urination, followed by a period of confusion and sometimes ambulatory automatism. He has had these spells since and had them up to 1926 about once a week. In 1926 he found that his spells became milder and not so frequent as formerly. He has now about one or two per month, but at the same time his general condition has not improved but rather has become worse. His chief complaint at the time when he came to the hospital in October 1926 was a peculiar feeling of restlessness and at the same time weakness and fatigue. At the time

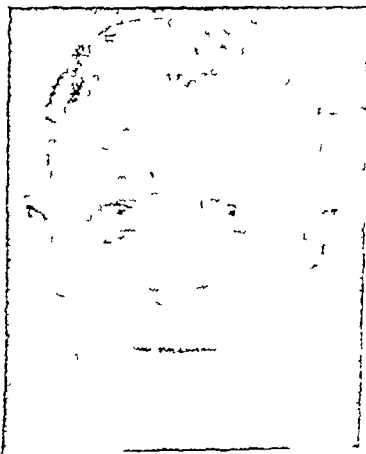


FIG. 1 Case 1 Stephen M. 31 showing suggestion of Parkinsonism

of the first examination very slight but quite undoubted symptoms of latent rigidity were revealed. They predominated on the right side of the body. The tendinous reflexes were somewhat hypertonic in type with antagonistic hamstring contraction, especially in the right patellar. There was a slight suggestion of 'cog wheel' in the right elbow, slight tremor of the tongue and of the fingers of both hands. Already, at that time the monotony of his facial expression, the peculiar wrinkling of his forehead and his somewhat fixed glance, attracted attention. The left pupil was found to be distinctly larger than the right, both reacting to light and accommodation. Horizontal nystagmus on lateral vision to right. No other cerebellar signs, no pyramidal signs. The plantar reflexes showed active flexion. Reflexes of defense showed only a slight motor and no emotional component. No sensory disturbances. Eye grounds normal. Wassermann test of the blood negative. As his spells at that time were not frequent, about once a month, he was not given any special treatment and was told to return within a few months. In May 1927 the patient returned. His spells did not trouble him much. As a matter of fact, he had had only two or three attacks within the time which had elapsed since his previous visit but his general con-

dition had deteriorated. The feeling of weakness and fatigue increased. The patient appeared to be much depressed and it was the first time that he spontaneously stated that he felt at times 'a kind of stiffness and tightness in his muscles.'

Neurological examination revealed at this time all the previously found slight signs of Parkinsonism but much exaggerated. On passive movements, distinct rigidity was found especially in the right arm and leg. The cog wheel sign was present in both elbows and forearms. Reaction of antagonists markedly exaggerated. Tendinous reflexes typically hyper-tonic. Tremor in both hands, some lack of associated movements when walking, and typical Parkinsonian attitude especially of the right hand and fingers.

Thus, in a patient 31 years old with the most definite history of epidemic encephalitis in 1918, there appeared quite frequent convulsions during the first three subsequent years and four years later there had gradually developed a mild but quite characteristic picture of the Parkinsonian syndrome *extra-pyramidal rigidity*, while the spells had markedly diminished in number and severity.

I have quoted this case merely as a suggestive introduction to the discussion of the second case, the clinical history of which, I believe, is quite remarkable.

#### CASE No 2—Ernest C—24

This is a colored man born in May 1903 at full term and from apparently healthy parents. He had a normal physical and mental development during childhood. No history of convulsions in infancy. He had had whooping cough at six and measles at seven without complications. In the winter of 1918, when he was about fifteen years old he had one convulsion which was attributed to indigestion. During the same winter he had as he said influenza complicated with pneumonia. He was sick for about four weeks was unconscious and recovered very slowly. As his memory at the present time is rather poor, one cannot obtain more details about this illness. At the time he was taken ill he was in the eighth grade of the Sharon school doing well. After his sickness his personality became changed in many ways with marked diminution of mental abilities. He worked for three years in various places as errand boy and doing other odd jobs. Unfortunately definite information about this period of his life between his attack of influenza and admission to the hospital cannot be exactly ascertained. He is said to have committed some delinquency. About one year after his influenza he began to have frequent convulsions. At about the same time that is in 1921 the first signs of rigidity were noticed subjectively in the beginning in his right leg later on the right side of the body. As his convulsions and mental enfeeblement made him unable to sustain himself, he was brought to the hospital and admitted in the autumn of 1922. According to the hospital records at that time he was already showing quite obvious and characteristic sluggishness in movements and motor inertia. In the monthly record of spells during the rest of 1922 is mentioned a few petit mal attacks and an occasional grand mal.

Since then none have ever been observed. At the same time especially during 1923 the muscular rigidity made rapid progress and has remained about stationary since. I saw him first in the middle of 1926 and since that time I have not seen any change in his condition. This condition is one of typical advanced muscular rigidity in the form of the Parkinsonian syndrome as can be seen without further explanation of the picture.

Thus, this patient, following a severe epidemic grippe in 1918, when he was about 14 or 15 years old, developed at first changes in personality, and mental enfeeblement, later epileptiform convulsions appeared which, although they had

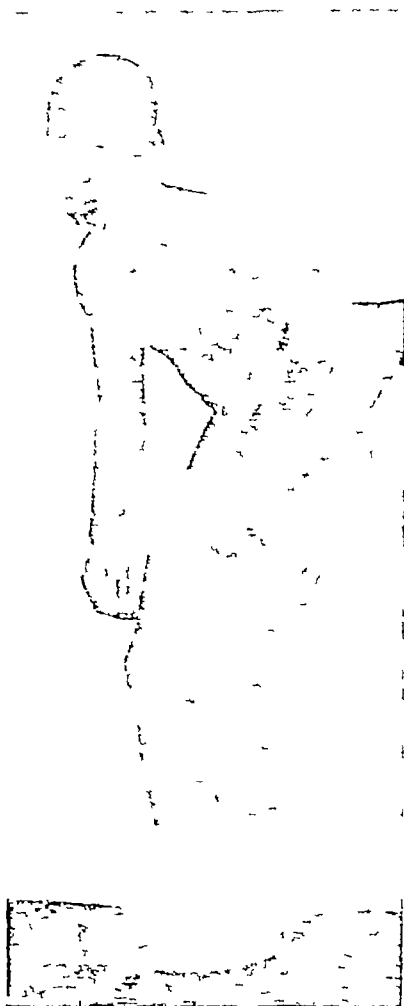


FIG 2 Case 2 Ernest C 24 Post-encephalitic Parkinsonian syndrome

been frequent, disappeared completely after the patient developed the picture of advanced extra-pyramidal muscular rigidity in the classical form of the post-encephalitis Parkinsonian syndrome.

In passing, let me mention that neither among my own cases of post-encephalitis Parkinsonian rigidity have I had occasion to see convulsions as a part of the syndrome, nor in the observations of many reliable authors could I find any example of such an occurrence.

The problem of the relationship between the evolution of epileptic paroxysms and the evolution of the extra-pyramidal rigidity is not confined to the problem of this relationship in encephalitic epilepsy and post-encephalitic Parkinsonism but seems to be based on a larger clinical foundation. In the course of epilepsy of more

or less long standing specific changes are observed in the afflicted individuals. These changes are what is commonly called "deterioration." The longer and closer I observe the deterioration of epileptics, the stronger grows in my mind a conviction that this deterioration is a clinical syndrome of which paroxysms are the earliest, the most constant, the most characteristic, but perhaps not absolutely necessary element. Since until recently such a conception of epileptic deterioration has been entirely subordinated to the theory of the paroxysms as the etiological factor in epilepsy, I feel that this theory should be questioned.

In the clinical evolution of the deterioration, besides characteristic changes in the mental sphere of the afflicted individuals, there take place neurosomatic changes, characteristic and amenable to clinical determinism. Among the symptoms of neurosomatic deterioration of epileptics the signs of the group of Parkinsonism, at first faint, later more and more definite, are especially common and I dare say clinically the most characteristic. So, in several hundred patients at the Monson State Hospital, that is in patients with more or less long standing epilepsy and a more or less confirmed degree of deterioration, a good half of them showed these symptoms of Parkinsonism as the only neurological findings or, more frequently, associated with other organic signs of extrapyramidal, pyramidal and sometimes of cerebellar degeneration.

A clinical history of one case I will discuss here as an illustration. Not many of our patients exhibit the state of Parkinsonism shown in this case in such a definite form, but many of them do so with sufficient clinical evidence to give me foundation for the above expressed ideas.

#### CASE No 3—Louis C—49

The family history is negative. The mother had seven children without miscarriages. The patient has four brothers and two sisters living and well. The patient's sister said that, as far as she can remember he was well as a baby and was apparently healthy during childhood. However, he seemed to be duller than the other brothers and sisters. The patient always has been a man of good habits and until he began to have his spells he was industrious and thrifty a shoe-maker by trade. When about thirty years of age that is, eighteen or nineteen years ago he lost his wife and one baby who were burned in a fire. It is said that this misfortune deeply affected him. Soon afterwards he married a second time, the sister of his former wife. After his second marriage he began to have epileptic spells. At first they were petit mal, his eyes become glassy he appears dazed and does strange things such as taking off his shoes. Later complete convulsions appeared and gradually grew in number and severity. At one time he had them as frequently as three or four petit mal attacks per day and almost every day he had grand mal convulsions. He began to fail mentally, became dull, inactive and apathetic. His second wife left him on account of these spells. He tried to work in different places but could not hold a job long. Although his mental condition continued to grow worse, in later years his spells became less frequent. In April 1925 he was admitted to the hospital and during the rest of the year averaged four to five spells a month. During the years 1926

and 1927 the number of his spells remained about the same. At the present time he has about *three attacks per month*. He was examined by myself in August 1926. His mental condition at that time was typical of epileptic deterioration. He was not demented in the proper sense of the word but showed characteristic traits of inhibition of the higher mental activities, slow monotonous flow of ideas, retarded mental associations, poverty of initiative. He has not the slightest idea of his epileptic paroxysms. As a matter of fact, he even shows astonishment that he has spells. During the neurological examination attention was attracted by the peculiar and quite characteristic attitude of the patient as shown by the pictures (Figures 3-4). His movements are slow, lacking in variety, and when walking the normal synkinesias are absent. His voice is monotonous and somewhat dragging, his facial expression uniform and stereotyped, the glance is immobile, the pupils contracted with conservation of all reflex reactions. No nystagmus but irregularly repeated movements of the eyeballs on lateral vision. Tongue protrudes symmetrically and shows tremor. Fine tremor exists also in the fingers of both hands. Testing passive movements in the extremities, one feels a certain amount of rigidity and the cog wheel sign is often perceived in the elbows and forearms.

The tendinous reflexes sometimes are typically hypertonic, especially the patellar, which is more rigid on the left side. The tonic postural reflexes are exaggerated on both sides more so on the left. Reaction of the antagonists exaggerated. No signs of pyramidal, cerebellar or sensory disturbances. Byegrounds normal. Wassermann test on the spinal fluid and blood repeatedly negative.

In this case we have, therefore, an illustration of typical neurosomatic changes in a case of late epilepsy of about eighteen years' duration, showing marked deterioration. In an individual previously healthy in every way appeared epileptic convulsions which were quite frequent during the first few years after the onset, accompanied by mental enfeeblement. Later these spells became relatively rare in number and at the same time a typical picture of Parkinsonism developed with advancement of deterioration.

I wish to specify that I am not the only one whose attention has been drawn to the symptoms of Parkinsonism in the course of epileptic deterioration. Thus, Urechia and Elekes<sup>3</sup> described a patient 42 years old, who from the age of two years was subject to epilepsy and had frequent convulsions. About three or four years before his death he gradually developed a typical Parkinsonian syndrome while the convulsions entirely disappeared. This case was studied later pathologically by Urechia and Michalescu<sup>4</sup>. In the brief note concerning the anatomical examination of the brain, the authors cite the marked degenerative changes in the region of the basal ganglia without evidence of an inflammatory process. The authors conclude that the possibility is not excluded that the Parkinsonian syndrome in the clinical history of this case might have been due to a superadded epidemic encephalitis, however, absence of inflammatory lesions in this condition would be quite exceptional.

Toulouse, Marchang, Bauer and Male<sup>5</sup> in 1926 presented at the meeting of the Paris Clinico-

cal Society of Mental Medicine two cases of epilepsy present from early childhood with marked mental enfeeblement and development of the Parkinsonian syndrome in the later evolution. Unfortunately in the available abstract of the transactions of the Society, I could not find any statement regarding the evolution of the epileptic paroxysms in these interesting cases before and after the onset of the Parkinsonian syndrome.

I suppose the reader has noticed already, if not I call his attention to the fact, that when speaking of characteristic signs of neurosomatic deterioration in epileptics, I used the somewhat vague term of Parkinsonism in preference to the

clinically between Parkinsonism developing in the evolution of epileptic deterioration and Parkinson's disease and the post-encephalitic Parkinsonian syndrome *sensu strictu*.

First of all, in epileptoid deterioration, mental changes constitute, no doubt, too important a component to be overlooked, while in the Parkin-



FIGS 34 Case 3 L. C. 40 Parkinsonism in a deteriorated epileptic

specific term Parkinsonian syndrome. If there has thus far seemed to be an analogy between the neurological picture of some deteriorated epileptics and the picture of Parkinson's disease, as there was for example in the case I have just discussed, this is, however, merely an analogy, but, so far, I cannot commit myself to the statement that there is necessarily an identity. Many important features permit of differentiation

soman syndrome proper the mental changes recede far into the background, if present at all.

Secondly, the signs of Parkinsonism in epileptic deterioration develop and persist only in a relative minority of cases in a pure form as I have already mentioned, in the majority of epileptics, the symptoms of Parkinsonism are usually associated with signs of organic deficiency in other parts of the central nervous

system These signs of Parkinsonism frequently are associated with symptoms of deficiency of the cortico-pyramidal system, so as to give an extremely intricate semeiological blend This last association of symptoms, that is, subcortical and cortico-pyramidal, often results in a picture resembling pseudo bulbar palsy \*

In epileptic deterioration a symptom-complex similar to the extra-pyramidal, rigid type of pseudo-bulbar palsy is frequently encountered This last symptom-complex is observed paradoxically enough in two extremes of the life scale On the other hand it appears in aged people, among which two groups can be discriminated those who develop first a clinical picture of pseudo-bulbar palsy and then begin to have epileptiform attacks, usually mild (vertigo) attacks as an integral part of their syndrome, and those who life-long were subject to epilepsy and gradually developed in the process of deterioration a more or less close picture of pseudo-bulbar palsy These two groups belong to the "senile" form of this condition

On the other hand, the pseudo-bulbar symptom-complex of the rigid type is observed in young epileptics at the end of the first and the first part of the second decades of life,—"juvenile" pseudo-bulbar palsy of epileptics One of these last cases I am going to discuss as an illustration

#### CASE No 4—Joseph M—15

Born at full term in May, 1911 Father and mother were healthy Mother had no miscarriages The patient was the first child and was considered a normal infant cut his teeth, walked and talked so far as it could be ascertained, at the average time and had no convulsions in infancy On two occasions when four months old and when three years old, he fell from the baby carriage and injured his head The mother thinks that he never had any of the childhood diseases When about four months old the first convulsion was recorded, without fever, and without indication of some acute illness preceding or following this first attack Since that time he has continued to have them frequently He showed considerable delay in his mental development and never went to school In November, 1923, he was admitted to the hospital His psychometric test at that time was one of a child of about four or five years old with a chronological age of twelve, and he has markedly failed since According to the hospital records at the time of admission the patient appeared to be well developed physically Though mentally very deficient he was able to walk and run around and play with other boys at the Children's Colony He had numerous epileptic seizures averaging from fifteen to twenty per month During the rest of 1923 and during 1924 he continued to have frequent attacks with about the same average of fifteen per month In 1906 his physical and mental condition showed sudden and

marked impairment. Paradoxically enough his spells were becoming less numerous During the last part of 1925 and the beginning of 1926 he had an average of ten spells per month I examined him first in October, 1926, at which time he was in the condition shown by Figures 5 & 6 His spells became rare four or five per month At the same time about four or five months ago, he became exceedingly rigid, spent most of his time in bed and one could hardly induce him to walk. During the neurological examination the general muscular rigidity was striking His general attitude is one of ante-flexion of the trunk head bent down arms rigidly flexed at elbows hands and fingers in characteristic posture—the thumb and in

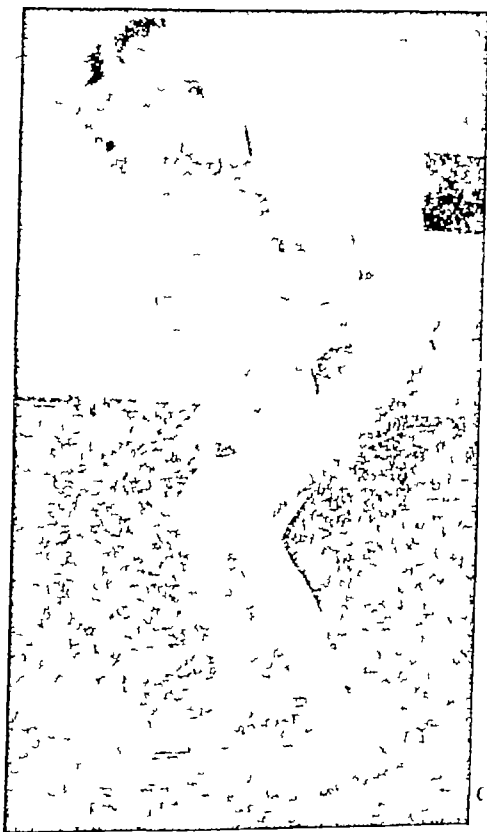


FIG 5 Case 4 Joseph M 15 Parkinsonian and Pseudo bulbar attitude of body

dex fingers together—flexed at the first phalanges, extended at the distal phalanges Legs flexed at the knees, adducted at the hips When walking associated movements are lacking One observes a peculiar picture of muscular rigidity and paraplegic spasticity He walks taking short steps typically "démarche à petit pas"

His face is unexpressive and immobile the lower jaw drooping the mouth open saliva drooling over the lower lip He does not speak spontaneously but when stimulated he answers questions in a slow monotonous and monosyllabic manner He pronounces the words at the expiratory phase Pupils are equal but react to light sluggishly When asked to show his tongue he does it slowly, begins with delay and does not protrude it completely No tremor in the tongue At times, however, rhythmical tremor was seen in the fingers of both hands On passive movements in the extremities one perceives an extreme rigidity The tendinous reflexes are exaggerated with high amplitude and low threshold and

\*Pseudo-bulbar palsy accurately speaking is neither a disease nor a syndrome but rather a broad symptomatological conception a cortico subcortical symptom complex developing in various diseases of the brain and including different neurological syndromes Among these syndromes so far have been clearly isolated the pyramidal type of pseudo bulbar palsy (double hemiplegia in senile lacunary disintegration of the brain) and the extra pyramidal type of pseudo bulbar palsy isolated not so long ago by Lhermitte in which type the symptoms of the pyramidal lesion recede into the background of the clinical picture while the symptom complex of pallidal rigidity predominates It is recognized that between these two extreme types all intermedial degrees can be observed

at the same time they are hypertonic, that is abrupt, with exaggerated contraction of the antagonists and in the patellar one observes a typical exaggeration of the flexion phase over the extension phase with marked hamstring "braking phenomenon". The plantar reflexes are distinctly extensor on the left side on the right side the response is sluggish sometimes flexion more often extension. Reflexes of defense are exaggerated in both motor and emotional components and more so on the left side. Reaction of the antagonists is highly exaggerated. There is a distinct cog wheel sign especially in the right elbow and right forearm. There is clonus in both feet. Eye grounds normal. Wassermann negative. A Wassermann test of the parents could not be done.

ski, peculiar clumsiness, slowness of movements. In his gait one can discriminate not only extrapyramidal rigidity but also paraplegic spasticity.

Basing my deductions on the ultimate evolution of several other similar cases under my observation at present I venture a prognosis in this case. His future, I believe, is a cerebral paraplegia in flexion similar to a few other cases where the ultimate condition is illustrated to full extent (Figs 8-9-10). There are, in the hospital, at least thirty cases of various degrees of the



FIG 6 Case 4 Joseph M 15 Note flexion attitude of lower limbs. This attitude became more and more his favorite position.

As one sees from the history of this patient, the condition in which he is found at the present time developed rather rapidly during the last two or three years. I believe there is no necessity to emphasize the striking analogy in his general aspect, especially in the posture of trunk and extremities, with the aspect and the posture of the case of post-encephalitic Parkinsonian syndrome, Ernest C. (case 2), but at the same time there are found many important points of difference between these two cases. The main difference is that in the case of Joseph M., besides the well-expressed symptomatology of extrapyramidal rigidity, there are present numerous symptoms of advanced pyramidal deficiency: bilateral Babinski sign, clonus, not only hypertonic but also exaggerated tendinous reflexes, exaggerated reflexes of defense, exaggerated emotional reaction to painful stimuli, in striking contrast to the absolute indifference in the Parkinsonian case. The drooping lower jaw, open mouth, difficulty of swallowing, the speech at the end of the expiratory phase, and "démarche à petit pas", in the case of Joseph M. suggestively bring into mind the idea of juvenile pseudo bulbar palsy. Looking at him one hardly would escape the impression of premature senility. He has that peculiar oldish aspect, "l'air vieillot", so characteristic of this condition, of which this case, I believe, is a rather typical example. The symptomatology of this patient exhibits an excellent illustration of the intricate blend of signs of two different types on the one hand, rigidity, tremor, Parkinsonian attitude, lack of associated movements, on the other hand, mental enfeeblement, spasticity, bilateral Babinski,

evolution of this condition (Fig 7)—Joseph M. is not yet completely paraplegic but already with the suggestive symptoms of paraplegic spasticity in the legs, he has a marked tendency to this flexion attitude of the lower limbs when he is in bed (Fig 6).

In many other instances, one could demonstrate the opposition between evolution of the rigidity on the one side and the number of spells on the other.

The few cases I have just discussed belong, no doubt, to the most characteristic which have come under our observation. I would, perhaps, hesitate to present their histories as an argument in favor of my contention that *extrapyramidal rigidity is extremely characteristic in the evolution of epileptic deterioration and that with the advancement of this rigidity often there is a coincident diminishing in number or even disappearance of convulsions*, if this same contention did not seem to be supported by the analogous facts observed in larger clinical experience. In a separate work Dr. Hodskins and myself are pursuing at present on organic nervous semeiology in epileptics some preliminary data were collected. I take the liberty of discussing briefly some of the preliminary results based on material of three hundred cases and bearing on the extrapyramidal component of the semeiology of epileptics and the average number of spells in the same cases. On the diagram "A"—(Fig 12) are represented two curves. The dotted curve "G M." represents the average number of grand mal attacks. Continuous curve "Ex-Py" represents the average frequency of extrapyramidal symptoms on the same cases. Every

successive joint of each curve corresponds to the successive age groups

The average duration of epilepsy in these patients is about proportioned to the age. The reason of this parallelism between age and duration is given by Diagram B, (Fig 11). On this diagram is given the frequency of onset of convulsions in successive years of the life scale of

toms referable to deficiency at the subcortical functional level, steadily increases with advancement of the age, and therefore, with advancement of the duration of the epilepsy. This curve represents almost exclusively the symptoms of the so called pallidal type, that is, exaggerated reaction of the antagonists, exaggerated tonic or postural reflexes, abolished normal syn-



Initial state FIG 7



FIG 8

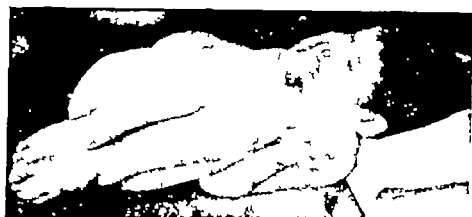


FIG 9



FIG 10

Three cases Figs 8 9 10 of juvenile pseudo bulbar palsy presenting picture of ultimate evolution of cerebral flexion paraplegia. Convulsions were frequent but became rare

our cases. One can see that a majority of our epileptics began their convulsions before nineteen years of age. We call this group "juvenile epilepsy." In a minority of cases the convulsions began after nineteen and occurred with about regular and even frequency throughout the rest of the life scale. Let us call it "late epilepsy."

The predominance of the onset in the very beginning of life explains the parallelism between the age of the patient and the duration of the epilepsy.

Let us return to the curves of Diagram A. As is shown by the curve "Ex-Py", the average frequency of observed extrapyramidal symp-

knesias, diminished or abolished reactions to painful stimuli, hypertonic tendinous reflexes, cog-wheel, tremor, just those signs which are generally characteristic of Parkinsonism.

The second curve on this diagram, curve G-M, does not require much discussion. The average number of spells, grand mal only being considered, in the cases of the first decade, is nine per month at the respective time of examination of each case. In the first half of the second decade, seven spells, in the second half, five, in the third decade, four, in the fourth, four, in the fifth, three, and in the last two decades, two or less than two.

Comparing the curve of spells with the curve

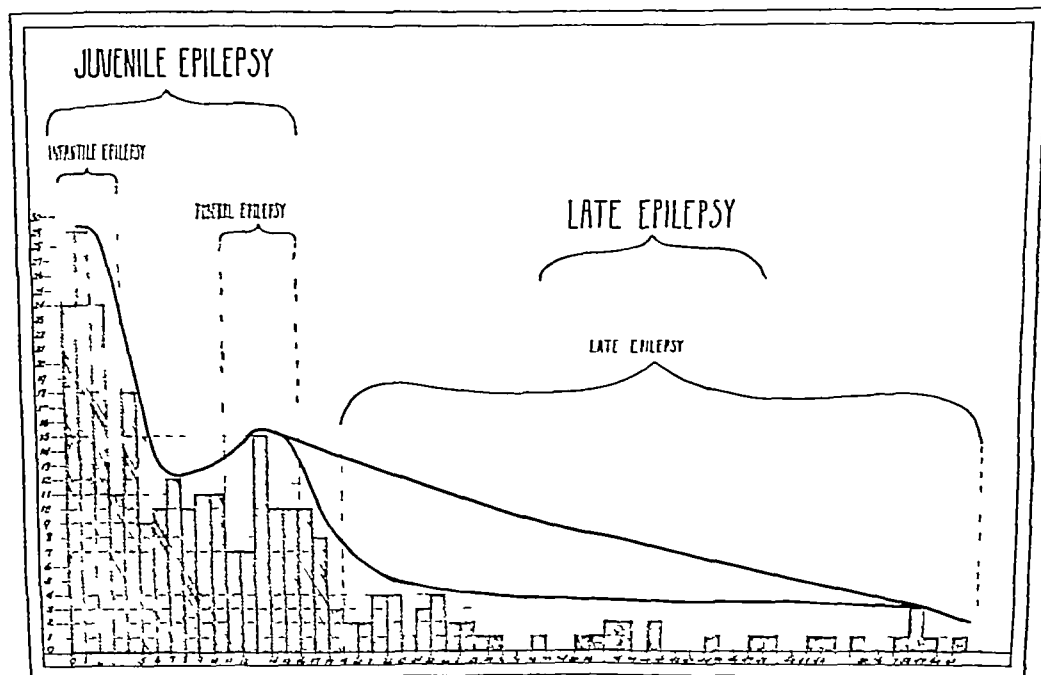


FIG 11 Relative frequency of the onset of convulsions in successive years of age

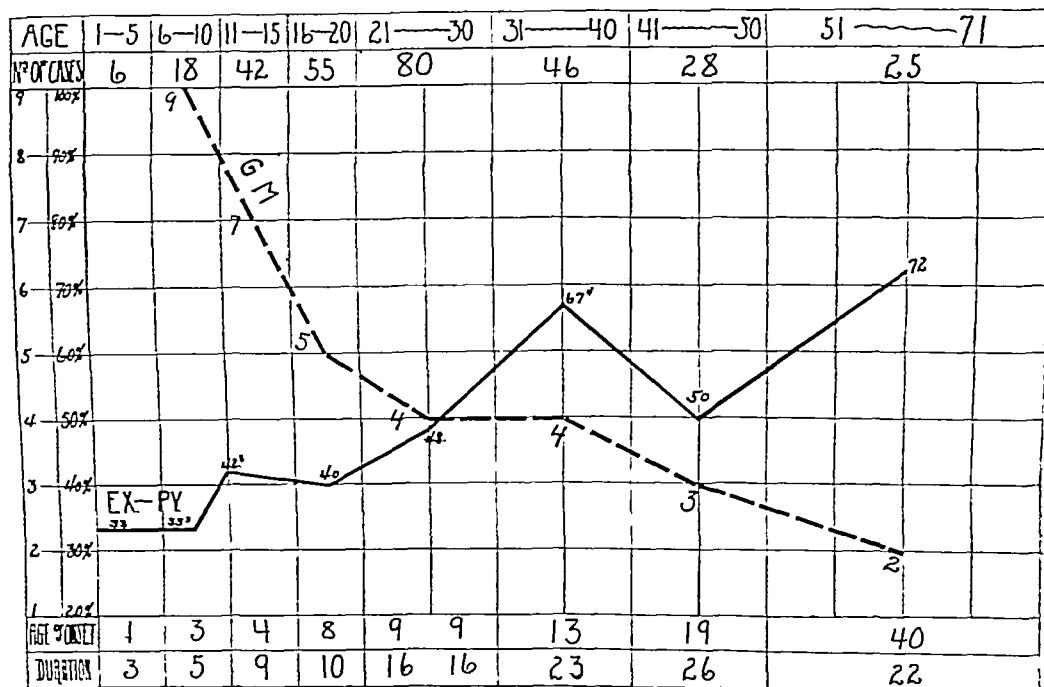


FIG 12 Curve 'G M.' (dotted line) average number of convulsions in respective age groups

Curve 'EX-PY' (continuous line) relative frequency of muscular rigidity and of other symptoms of Parkinsonism in respective age-groups

of rigidity, one can see that if in the details the curves do not show regular relationship, nevertheless, in the general run throughout the material they are interrelated. With advancement of the age and the relative duration of the epilepsy, rigidity is more and more frequent, the curve steadily rises, while at the same time and in the same material the number of spells be-

comes less and less,—the curve of grand mal attacks goes in the opposite direction.

Such are the clinical phenomena which I have encountered. Whether they are accidental or virtually interrelated, I cannot be absolutely sure. This is a problem for further observation. I think, however, that extrapyramidal rigidity, wearing out of the sub-cortical functional level,



is the physical sub-stratum of epileptic deterioration I believe, also, that when the functional disintegration of the upper neural levels, and especially of the sub cortical, reaches a certain degree of advancement the convulsive reaction capacity of the diseased central nervous system diminishes \*

\*I would not feel that this paper is finished without expressing deep acknowledgment to Dr Morgan B Hodskins for the abundant facilities afforded me in my hospital work and to Dr Stanley Cobb for his never failing encouragement

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## A NEW INSTRUMENT FOR THE CYSTOSCOPIC REMOVAL OF URETERAL CALCULI\*

BY SAMUEL N VOSE, M D, F A C S †

THE cystoscopic method of attack upon impacted ureteral calculi has received considerable attention from urologists during the past few years. Its advantages are obvious. Its field of usefulness is limited, however, by several considerations, chief among which are the delay and uncertainty incident to this mode of treatment. Many patients object to repeated cystoscopic manipulations, preferring an operation and quick relief from their troubles. Infection and evidences of renal damage occasionally demand operative removal of a stone which might reasonably be expected to pass if given enough time and encouragement.

In the attempt to overcome these limitations a number of instruments have been devised to facilitate the passage of impacted stones. In general these are intended merely to dislodge the stone or dilate the impeding stricture, the actual expulsion of the stone being left to nature, the obstacles to its passage having been removed. In one or two instances the purpose of the instrument is to grasp the stone and extract it. The use of many of these instruments is not without danger of serious injury to the ureter, and although the element of risk necessarily attends any surgical procedure, the consensus among urologists seems to be that perhaps as much may be safely accomplished by simple dilatation or by the use of the indwelling ureteral catheter.

Most of the efforts along this line have been directed toward the ideal result of removing the stone intact. While this is no doubt satisfying to the natural curiosity of the patient, it does not seem essential to his relief and certain stones might be more easily removed if they could be reduced in size while in the ureter. The theoretical aspects of the subject of crushing ureteral stones have been ably treated by Cecil<sup>1</sup>, who in 1926 designed an instrument for the purpose and reported a case in which it was successfully accomplished. While this method has not had sufficient trial to definitely establish its

value, it would seem to be a rational procedure in some cases if further experience proves that it can be done without disproportionate danger.

The instrument herewith described has been designed for the purpose of extracting small stones from the ureter and crushing certain larger ones, and possesses several features of safety and efficiency lacking in instruments which have come to my attention.

It consists of a flexible cannula, of the type commonly used in cystoscopic operating instruments, long enough to reach the upper ureter through the operating cystoscope. To the proximal end of the cannula is attached a handle of the ordinary thumb and finger ring type. Into the distal end of the cannula is fitted a specially designed wire snare, which encloses within its wires two metal jaws. A clear idea of the construction may be had from the accompanying drawings. Note that the four wires of the snare are in reality two continuous wires, extending the entire length of the cannula. Situated laterally to the face of the jaws, they effectually prevent the possibility of the ureter being caught between the jaws in closing the instrument. The spread of the snare is caused by the natural spring of the wires as they emerge from the cannula and impinge on the rounded lateral surface of the proximal jaw. Injury from overdistention of the ureter is thus prevented. The spread is enough, however, to admit good sized stones, particularly as the wire is not rigid and will adapt itself to the size of the stone. A\* no point is the wire sharply bent, this feature rendering breaking very unlikely. To the screw at the distal end may be attached either a blunt tip or filiform. Both the handle and snare are detachable for purposes of cleaning, repair or replacement.

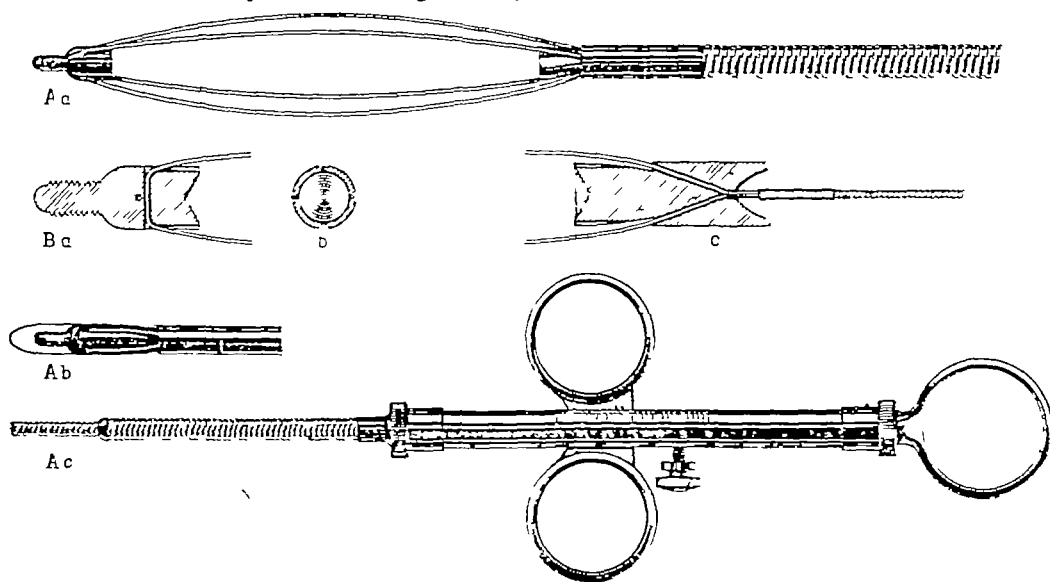
This instrument has been used in four cases of ureteral stone. In one case the stone was so tightly impacted that no instrument could be passed by the obstruction and after several attempts ureterotomy was done, at which time the stone was dislodged from its bed with difficulty. In two cases the stone was extracted at the first attempt and in the fourth case the stone was

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†For record and address of author see This Week's Issue page 648

crushed at the second cystoscopy, a previous attempt having failed to pass the instrument by the stone. These patients were kept in the hospital for two to four days after the operation,

crushing as a method of removal of ureteral calculi has not had sufficient trial to definitely fix its status, there is no obvious reason why it should not be safely carried out and be of con-



A a Snare opened with jaws separated  
B a b c. Cross sections showing construction  
A b Instrument closed with blunt tip for introduction  
A c Handle

but in no case did any reaction occur. In addition to this clinical test, the instrument has been tried on a variety of stones previously passed. In no instance has one been found hard enough to resist the crushing action. The technique which has proved useful consists in passing the instrument by the stone, opening the snare and withdrawing it by the stone which is caught in passing. A scale on the handle shows whether the snare is open or closed.

In conclusion, it may be repeated that while

considerable value in many cases. In any event, the extraction of small stones by means of the instrument described is a safe and practicable method of removal.

I wish to express my appreciation of the help of Mr. R. H. Wappler of New York in working out the mechanical details of this instrument.

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## A NOTE ON TWO RARE ANATOMICAL FUGITIVE SHEETS\*

BY JAMES F. BALLARD†

**D**URING the past year the Boston Medical Library has been successful in acquiring a number of important historical books, including the first printed medical book published in the United States and the anatomical drawings of Alexander Ramsay. There has also been loaned to the Library the important Bullard collection of 140 medical incunabula. More recently two extremely rare anatomical fugitive sheets have been discovered and are herewith reproduced.

In the early days of printing popular broadsides were published dealing with business, religion, health and disease. Those relating to health dealt chiefly with bleeding, purging, and the pest, and 100 purgation and bleeding and 41

pest broadsides printed before 1501 are known and described.

The first medical book to be definitely illustrated is the "Fasciculus medicine" of John of Ketham, printed in 1491, of which there is only one known copy in an English speaking country and which is the property of the Boston Medical Library. The second anatomical illustration is the single sheet Hela skeleton of 1493 later reproduced in the 1497 edition of Brunswig's "Buch der chirurgia" and in the Latin "Hortus Sanitatis" of the same year, followed by the cut of the abdominal muscles to be found in the 1496 edition of the "Conciliator" of Petrus de Abano.

Many of the early presses must have printed anatomical broadsides which are well called fugitive sheets as comparatively few have survived.

\*Read before the Boston Medical History Club Feb. 24, 1925.

†For record and address of author see *This Week's Issue* page 645.

to this day. The most famous of these sheets are the *Tabulae "sechs"* of Vesalius printed at Venice in 1538 and which inspired many imitators or followers.

Of late years there has been manifested a great interest in these anatomical broadsides and Dr. LeRoy Crummer of Omaha<sup>1</sup> has made a special study of them and has classified them into various groups. These sheets are generally found pasted into or bound with large anatomical folios and it has been the dream of every collector to discover one of these broadsides.

A couple of months ago, while hunting for an anatomical book for Dr. John Warren, I noticed a large folio volume which attracted my attention. On examination it was found to be an uncut copy of the German "*Epitome*" of Vesalius of 1543, which itself is extremely rare, but bound in the back were two dated anatomical broadsides of extreme rarity, one of which is probably unique. They are either another edition or a variant of the Vogther plates of 1539. Dr. Crummer informs me that they are the same as the Guldenmuth set of 1539 which was printed at Nuremberg and he is of the opinion that Guldenmuth is the latinized form of Frolich. The imprint is "*Getruckt zu Strassburg bey Jacob Frolich im Jar 1544*". The plates measure twenty by twelve and one-half inches for the female and twenty by twelve inches for the male figure.

They are beautifully colored, so well done that it is hard to tell whether they have been printed or hand colored, but probably they have been colored by a master hand although color printing is known as early as 1497. The large figures are about twelve inches tall and they are surrounded by illustrations of various internal organs which are inserted into the text. The dissecting flaps are remarkably well attached and consist of six impositions in the female and five in the male.

In the female figure the uterus under the flap is depicted with the fetus crouched in the uterus with both hands over the ears. In the text immediately besides the large figure is a picture of the female organs with the uterus in place and in this uterus there is a crouching figure of the fetus with the hands over the eyes.

In Dr. Crummer's list there is a long gap between 1539 and 1552, that is of "*Adam and Eve*" plates. If the 1539 plates were inspired by the 1538 "*Tabulae*," it seems logical to assume that this set of 1544 figures was inspired by the 1543 "*Epitome*". They belong to the so called Adam and Eve plates. A copy of the female figure is at Strassburg but the male figure is unrecorded and probably unique.

#### REFERENCE

<sup>1</sup> Ann. Med. History 1923 5 189 1925 7 1

nam. ma oder abtinterfetzung eines

Wans lab/wie er inwendig gestaltert ist



Dermaas tuff darinnen alle  
leßer außzunemen, vñ den  
leberne focher außzunehmen  
das haupt der vñ alle auß  
spielet vñ anderer Zuchalles ge  
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ber außzunehmen werden

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 schenck nit zu bleich erden  
 aufen als zu eren best usung  
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 beacht sich auch vil kranche  
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 schenck teils. Spinnnen er  
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der speiß des m. m. das ist  
an sich ein vnd darauf ein tern  
lauter geolue macht dem schwa  
d. davon absonneret welches dann  
ist die feuchte Colera in das bey  
len der Gallen / Die Hefe der  
welches in melancoley ist schade  
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Die soll ist an anhangend seßlin  
in mittern arthern welche alle  
burtstert des mitters an sich zu  
het auch von saner solle fallen  
gröste arthet hehens endz ins  
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En an dretstahstert er a hter



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 van von der grōßer keltē vnd (schē)  
 ein auch von ubinger trüctne. Tre  
 escher der sand perlemania. hys  
 an vnder thesma / p'arasia vnd  
 der Celten. p'asia vō dīsen beyē

Das berg ist ein feilte hausung  
des geists der seel vñ menschlích  
ichs d3 hrg unfeild es menschl  
lich ch3ra; mas vilneren vñ  
arterren verschene / unten yz bar  
es der blut sellun co schema-

Das selbama ist ein nützliohes  
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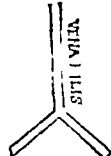
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warm vñ truf-  
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Es kommen  
auch schmerz-  
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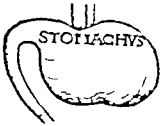


Die ader Voss  
Kilus hatzen v  
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sieh gleich wie ein  
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des haupt / arm /  
vñnd brust / nach  
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rucht grad vñ bey  
der muer d'sch  
ehrl kylet s'sich  
wider zu zuen litz  
aner in lincel der  
en / in der rech  
ten schenckel



In dem blindesten  
Wasserdarm sind  
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che etwas vil böß  
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# Phithomia oder abtontersetzung eines Weibs leib/wie er inwendig gestaltet ist



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le speiß empfangen / vnd von der  
lebern aetocht wurt vnd auß ihm  
das haupt hertz vñ alle alider aet  
speiset vñ erretet. Auch alle aet  
blut auß dem herten vñ der le  
bern aet in werden

Aber bey des magens münd(er)  
scheynen zu tiner beschließung  
vñ sterete des magens münd. So  
begeben sich auch vil krankheit  
in dem münd des magens als ver  
schlemung / auch fere er an nuce  
löcheren von herßen flüssen des  
haupts oder er in vñ den hals  
geschwer welches Quinaria ge  
nant erwaßet werden schreiffe  
speise / aetochet sich dicken send  
zu gebrauchten auch stete übung  
besser speiß oder newurtz / dann  
es bunge vñ natürlüche böse pyz.



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zusammen gerühen blut welche von  
der speiß des magens das hertz  
an sich / aet / vñ darauß ein reyn  
lauter aet blut macht / vñ schaum  
daraus abhinderet welches dann  
ist die saure Colera in das hertz  
lein der gallen / Die Hefe aber  
welches vñ melancoley ist / schreibe  
freundt nütz. Die mensjrua oder  
weibs kuff hat jren vñß vñ von  
der lebern einader die sich herab  
zu heuen / vñ vñ theoff der muer  
wieh / vñ vñ geynet ist

Die gall ist ein hangend seßlin  
im münd der lebern welche alle  
bittert vñ des magens an sich zu  
her auch von seiner solle fallen  
erwisse arbeyt / bibens vñnd / ino  
uwerchut / freßlich darauß / fere es  
vñ andere krankheit er wachsen



Die lung ist ein beede vñnd bet  
helt vñnd des hertzens vñ welcher  
erwan kumpet reuden / vñnd der  
verföpfung der lungen rdt / er  
wan von groffer kette vñnd frucht  
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geschwer send petripulmois hrt  
ig von der plegma / Pleureis vñ  
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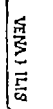
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milch vertere

u ure So aetern vñnd inwendig  
herab vñnd dñnd des weibs  
in die muer dñnd das kind sein  
vñnd dñnd hat bñnd an die we  
geborn wurt. Darnach verfert  
es vñnd lufft alle in dñnd vñnd  
wider zu. Darnach den weibern  
na h der gebu / die dñnd gang  
voll vñnd hart werden / bñnd die  
geng der weibern dñnd vñnd



Die luter sind  
warm vñnd reut  
et / dñnd wñ  
et alle frucht  
ein vñnd dem  
Gagen in die  
Blasen gefürt  
werden

Es kommen  
auch schmerz  
den nert von  
verföpfung  
der gesalene flegma vñnd Colera  
welches sich zu ei  
nem Geyn oder  
geng verjant



Die ader Vena  
Zulus / hat jren va  
spuna vñnd der le  
bern vñnd thep  
sich gleich wie ein  
baum in vil dñnd  
das haupt / arm  
vñnd brust / nach  
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der muer vñnd  
echt reylet / sich  
wider in zwey dñnd  
einer in lunct / der  
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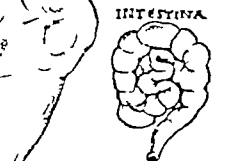


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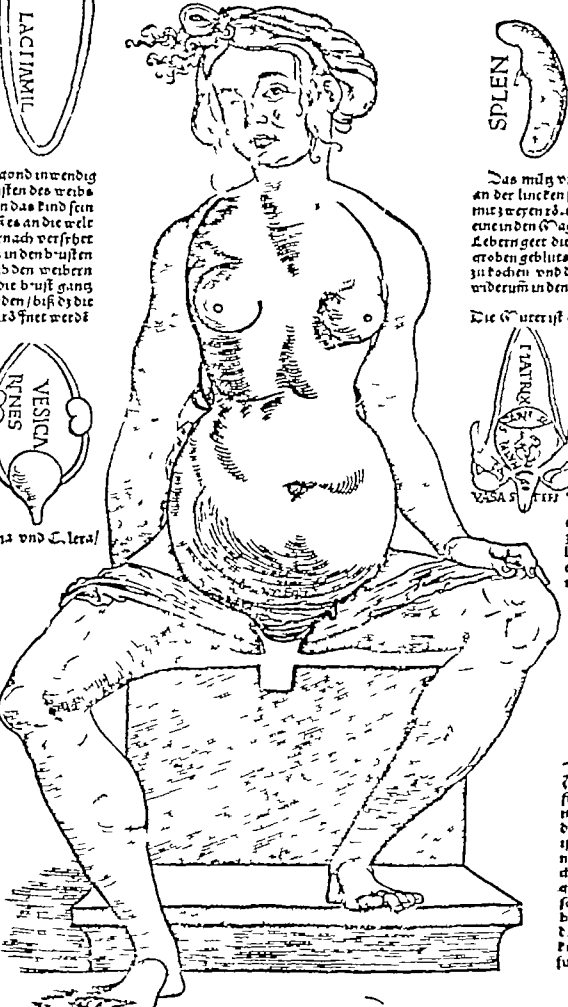
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**Case Records**  
of the  
**Massachusetts General Hospital**

ANTE MORTEM AND POST MORTEM RECORDS AS USED IN  
WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY R C CABOT, M.D.

F M PAINTER, A.B. ASSISTANT EDITOR

CASE 14121  
**CHRONIC ASTHMA**  
MEDICAL DEPARTMENT

An American of seventy-seven entered the hospital December 15 so weak that the history taking was stopped almost at its beginning. The chief complaint was "bronchial asthma."

As long as he could remember he had had "asthma" of the worst sort. The present attack began suddenly three weeks before admission.

Clinical examination showed a pale, emaciated very senile old man coughing weakly but frequently and occasionally raising a drab of grayish mucopurulent non-tenacious sputum. Lower conjunctivae bordered with mucopurulent secretion. Teeth all missing. The throat showed a few slightly red areas covered with exudate. Spine stiffened. Apex impulse of the heart felt 10 centimeters to the left of midsternum, coinciding with the left border of dullness 2 centimeters outside the midclavicular line. Supracardiac dullness and right border of dullness not made out. Sounds of poor quality, weak. Pulmonic second sound accentuated. Rhythm regular. A soft apical systolic murmur, a questionable basal systolic, no diastolic. Artery walls markedly thickened and tortuous. Blood pressure 90/0. There was a definite reduction in the intensity of sound at 40 millimeters, but definite beats could be heard down to zero. Marked emphysema. Occasional diffuse asthmatic squeaks. Coarse rhonchi throughout, disappearing after cough. No consolidation made out. Diffuse moist râles which tended to disappear after coughing. Breath sounds prolonged and slightly raised in pitch. Whisper diminished throughout. Slight dullness at both bases behind. Tactile fremitus normal or slightly decreased. Expansion limited equally on both sides. Marked apical retraction, more on the right. Slight tenderness in the right upper quadrant. Voluntary spasm prevented satisfactory examination. Cecum enlarged, firm, full of gurgles, not hard or tender. Slight pitting edema of the feet more on the left. Extremities cold. Eczematoid macular eruption over both lower legs. Pupils normal. Fundi, especially the left, obscured as to detail by opaque lenses. Knee-jerks not obtained without reinforcement.

Amount of urine normal. Specific gravity 1.014, a trace of albumin, 10 to 20 leukocytes per field in the single specimen. Blood 6,200 to 9,300 leukocytes until December 20, polymorphonuclears 89.5 to 85 per cent, hemoglobin 40 to 45 per cent and reds 1,000,000 to 1,500,000 before transfusion, afterwards hemoglobin 50 to 55 per cent, reds 1,828,000 to 1,656,000. Entrance smear polymorphonuclears multilobed and granular, red cells showed more than normal variation in size and shape, a few large polychromatophilic cells, no true microcytes. Platelets not definitely diminished. Varied in size, a few large. No marked achromia. Smear December 16 polymorphonuclears old, with many lobes and large granules. Marked poikilocytosis and some anisocytosis, several small reds seen, a few large ones, reds in general smaller than normal, no young forms seen. Platelets slightly decreased, with some variation in size. Some large platelets. Reticulocytes 0.3 per cent before transfusion 0.1 to 8.6 per cent after transfusion. Red cell diameter measurements median and dispersion both markedly increased. Icteric index 15. Wassermann bile. Non-protein nitrogen 75 to 77 milligrams. Fasting contents of stomach 170 cubic centimeters of brown liquid with precipitate, no free hydrochloric acid, combined acid 52, guaiac strongly positive. Test meal 25 cubic centimeters of light brown material with precipitate, free hydrochloric acid 0, combined acid 24, guaiac positive.

Temperature 97.8° to 102.3°, rectal. Pulse 69 to 138. Respirations 24 to 32.

The patient was too weak for study. December 17 he seemed in a moribund coma. There was left facial paralysis, ptosis of the left eye and pulling of the mouth toward the right side. Tracheal râles were audible across the room. 600 cubic centimeters of blood was transfused. There seemed to be slight improvement following the transfusion. He roused somewhat from coma. Six hours later there was no facial paralysis. He progressed satisfactorily until the night of December 20. Then the rhonchi increased in number and became more widespread. The leukocyte count was 34,000. Soon after midnight he died.

**DISCUSSION**

BY RICHARD C CABOT, M.D.

**NOTES ON THE PHYSICAL EXAMINATION**

With the explanation as given I think the probable right reading of this blood pressure would be 90/40.

The hemoglobin reading would tend to make us think there was no achromia. They are asking themselves the question as to whether this is pernicious anemia or not, and trying to get light on that question from the details of the blood. Most of the facts on the blood so far are

against it. In pernicious anemia ordinarily we do see plenty of young forms. "Reticulated cells 0.3 per cent" is low. It backs up what I said about the young forms. The reticulated is a young form, and with an active marrow ordinarily would be in much higher per cent than that. There is a high figure after transfusion. Red cell diameter measurement is quite a difficult, long job to do. Since they have done it they have said the most important single thing there is to say in favor of pernicious anemia. The central fact about pernicious anemia is big, well colored cells. One ordinarily guesses at the size, but here they actually measured it.

DR TRACY B. MALLORY: Does that prove that their original guesses were wrong?

DR CABOT: Yes, I should say so.

The non-protein nitrogen is distinctly high, though not tremendously high.

The temperature most of the time is 100° or higher. The striking thing about the pulse is its gradual improvement so far as we can tell from the rate. So this is a febrile case with a pulse that looked as if it were improving.

"Too weak to get his story" makes us very likely to go wrong in our diagnosis, because correct diagnosis here, as figures show, is much more dependent on history than it is on physical examination. When we do not have a history we are much more apt to go wrong.

#### DIFFERENTIAL DIAGNOSIS

We have two main questions of interest, I think, as we examine the record of this case: the source (1) of his chest trouble, and (2) of his anemia. We have no X-ray, I take it, in this case. He was too sick for it. I am sorry for that, because it deprives us of the only method by which we can make a diagnosis of emphysema. I have seen the X-ray people go right several times lately when we could not make a diagnosis on physical signs. The history, so far as we have had it, is one that often ends in emphysema, a history, that is, of a very longstanding cough with asthma. The history, then, favors emphysema; the physical signs are neutral, and we have not got the X-ray.

When he came in he probably had a bronchitis which with the ascent of the leukocytes was at the end pneumonia.

We have no evidence of disease of the heart. If he had an emphysema for many years it is quite likely that his heart at the end would be hypertrophied. But physical signs give no evidence of that.

Aside from those signs in the lungs and heart we are concerned with the cause of his anemia. Anemia is what he died of, I think, aside from the terminal infection that he may have had. What was the cause of his anemia? We do not know as much as we should like about his kidneys. Could this be an anemia secondary to chronic nephritis? I think it could be. But it

is much more extreme than is present in the majority of cases of chronic nephritis, which show a distinct but only moderate degree, about 3,000,000 ordinarily. But cases are on record with as bad a record as this from chronic nephritis. The urine is consistent with chronic nephritis, but not conclusive. That is, we do not know whether the gravity is fixed, we do not know about the phthalein output, we have but one measurement of non-protein nitrogen, which is high but not distinctively high. So I am in doubt about the kidney. Almost anybody at his age would have arteriosclerosis in the kidney, but whether it is enough to call nephritis I can not say.

Then they were wondering about cancer of the stomach. In any obscure anemia we ought to say to ourselves "This may be cancer of the stomach" whether he has any stomach symptoms or not. They followed that up as well as they could. They demonstrated the presence of achylia, but they did not have an X-ray, which at the present time I think is essential for any reliable diagnosis of cancer of the stomach. I should say that since he has had so little in the way of stomach symptoms and since he has an anemia which in itself would be enough to abolish hydrochloric acid, we had better not suppose cancer.

I do not see that we have anything else in particular to guide us as to the cause of his anemia. We have speculated about the only two things—his kidney and his stomach—which we have any evidence about. It might of course be some type of bone marrow neoplasm. We have no evidence about that and could not have except through metastases or through certain characteristics of the blood which were not present here.

Intestinal parasites one generally mentions for completeness. We have no evidence about his feces, but if he lived here it is almost impossible that he should have died of anemia caused by intestinal parasites.

Poisons like benzol may give an anemia, but at his age and in the absence of known exposure I do not see any reason to consider that.

Can this be pernicious anemia? Yes, so far as I see it can. I cannot rule it out. I have mentioned the things chiefly against it,—the absence of an effort at regeneration, as shown by the presence of various kinds of young cells such as stippled and polychromatophilic, nucleated red, and these cells with a reticulum. We have no evidence of those. We have no evidence, in other words, that his marrow was making an effort to regenerate. On the other hand, we have conclusive evidence of enlargement of the red cells, which is rare in any form of anemia except pernicious anemia. He is rather old for pernicious anemia. The majority of cases occur in somewhat younger persons. He shows no evidence of having had a previous wave of anemia with recovery from it, which if we had had a

good history might have come out. We almost never in this hospital see cases in their first "down-wave" of anemia. Here, with no history, we cannot so far as I see say anything about it.

Can anything above the diaphragm, in his heart or lungs, account for this anemia? No, I do not see how it can. Of course sepsis is a cause of anemia. One asks whether there might be sepsis in the lung, bronchiectasis or abscess. But it would be strange if we did not get more signs, by sputum or by history, of any such thing. I do not believe, then, that the cause of his anemia is above the diaphragm.

I feel uncertain as to the cause. But I think more points favor pernicious anemia than anything else. It is rather more like that, and rather less like anything else that I can name. It might perfectly well be secondary to chronic nephritis, as I have said, if there is chronic nephritis. I have to end with three uncertainties: (1) Possible emphysema with terminal pneumonia. (2) Possible chronic nephritis in addition to that, with a secondary anemia. (3) Possibly pernicious anemia.

A PHYSICIAN: Wasn't the white count rather high?

DR CABOT: Yes, it was. I think I should have put more stress on it. That is another point against pernicious anemia. Pernicious anemia has a normal or diminished—usually diminished—white count, and a diminished polynuclear count.

A PHYSICIAN: Is it possible that in a man of seventy-seven his bone-marrow would be in such a state that it could not throw out young cells?

DR CABOT: You mean that he had pernicious anemia and his marrow could not act as most people's does? I do not know enough of the bone marrow of old age to answer that. So far as I know there is nothing known of the atrophy of bone marrow in old age.

DR MALLORY: I don't think there is any definite process.

A PHYSICIAN: He has had two positive guaiacs from the stomach contents.

DR CABOT: I do not think that is of much importance. We cannot avoid traumatism in the stomach in the way we abstract the contents. In relation to the only thing we have to think of, cancer, it seems to me it is very feeble support. We get here a great many positive guaiacs in the stomach and in the stools that we never account for.

MISS PAINTER: That leukocyte count was not taken until just before he died.

DR CABOT: Yes, the 34,000 came just before he died, but the six to nine thousand is high for pernicious anemia.

DR MALLORY: Wasn't he put on liver diet?

MISS PAINTER: Yes, on December 17.

DR CABOT: He died on the 20th, so he had three days of liver diet.

DR MALLORY: I think the reticulated count was subsequent to the liver.

DR CABOT: But they also transfused him, so we cannot say whether the liver or the transfusion did it.

A PHYSICIAN: What would you say about the icteric index?

DR CABOT: That is not at all queer for pernicious anemia. It is a great deal queerer for secondary anemia. I should think that would pretty well balance the other point against pernicious.

A PHYSICIAN: Would it be increased in metastatic cancer of the liver?

DR CABOT: Yes. That, of course, could perfectly well have increased the icteric index, but we ought to have got some evidence of that before death.

It is borne in upon me more and more in these exercises that one ought always to think of cancer of the prostate on general principles in cases in which we have not had an X-ray of the bones and in which there is nothing else to go upon. Prostatic cancer in many cases—not all—gives some palpable evidence. He did not have palpable evidence. If that is not present we can recognize cancer of the prostate only by X-ray of the bones, the characteristic metastases.

Another lesion that is always a good thing to think of is hypernephroma, which also can be entirely silent. But, as I said about cancer of the prostate, we have neither local nor metastatic symptoms of that, and if we do not have local or metastatic symptoms, then the thing may still exist, but we cannot diagnose it.

#### CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Pulmonary edema  
Bronchopneumonia  
Pernicious anemia  
Arteriosclerosis  
Chronic nephritis?

#### DR RICHARD C. CABOT'S DIAGNOSIS

Possible emphysema with terminal pneumonia,  
or  
Possible chronic nephritis in addition to that,  
with a secondary anemia, or  
Possibly pernicious anemia

#### ANATOMIC DIAGNOSES

- 1 *Primary fatal lesion*  
Pernicious anemia
- 2 *Secondary or terminal lesions*  
Bronchopneumonia  
Arteriosclerosis
- 3 *Historical landmarks*  
Benign hypertrophy of the prostate



DR TRACY B. MALLORY I do not think it is often possible to make an absolutely positive diagnosis of pernicious anemia at the post-mortem table. But certainly the findings in this case are very characteristic and I do not think there is much doubt that this is the disease from which he died.

Post-mortem examination ruled out most of the other things under discussion. No malignancy was found. It is interesting that the prostate was extremely big. He had a very much hypertrophied bladder with coarse muscular trabeculation and a few small diverticula, yet had never complained of urinary symptoms. It is rather striking how often that is the case. I remember one man whose necropsy I saw who died from a perforation of the bladder as a result of prostatic obstruction, but walked around for six hours after his bladder had perforated and never complained of any symptoms up to the moment of perforation.

The lungs did not show any marked degree of emphysema, and the right heart was not hypertrophied. There was, however, a diffuse terminal bronchopneumonia. There was quite marked arteriosclerosis, chiefly in the aorta and the larger cranial vessels.

The kidneys were of normal size and showed a very slight degree of arteriosclerosis. The bone marrow of the femur was bright red in color. There was hyperplasia of the marrow in the ribs, sternum, and vertebrae. Microscopic examination showed an extreme degree of hyperplasia. A considerable portion of the cells present were fairly mature blood cells, well developed normoblasts, for instance. The only bone marrow that I can feel certain is always due to pernicious anemia is the type found in the extreme relapses of the disease, which is composed almost exclusively of very early cells of the megaloblast type. Many of these were present here, but also many of the relatively mature cells. I think that the favorable reaction from his transfusion and the liver diet would perhaps account for the more mature cells in this case. The sections from the liver and spleen show very large amounts of hemosiderin, which is very characteristic of pernicious anemia though by no means pathognomonic.

DR CABOT I think it is worth while summing up some of the lessons we can learn from this case.

(1) That we can have a pernicious anemia with as high a white count as this in as old a man and with as little history so far as obtained.

(2) That we can get as much non-protein nitrogen with kidneys not importantly diseased.

(3) That we can get all the physical signs here described as to the chest without emphysema.

One of the points Dr. Mallory doubtless had in mind in settling on the diagnosis of pernicious anemia was not only that the bone marrow was normal but that there was no

other cause for anemia in the body. One cannot have any other kind of anemia and die of it without a cause. He had a good chance to look for a cause and there was not any. When a person dies of anemia with no cause we are pretty much bound to call it pernicious even if we do not find the marrow quite right.

## CASE 14122

### HEMORRHOIDS AS A SYMPTOM

#### SURGICAL DEPARTMENT

A married Scotchwoman forty-nine years old entered November 28 complaining of bleeding from hemorrhoids on movement of the bowels.

A year before admission her bowels, which had previously moved every other day without cathartics, became still more constipated. For two months they had required almost daily use of cathartics. Two months before admission she noticed protruding hemorrhoids after defecation. There was some bleeding and pain on sitting. The constipation was becoming steadily worse, and the hemorrhoids more troublesome. At admission they protruded constantly. She had lost five pounds during the year.

Her family history is negative. She had one miscarriage fourteen years before admission. She had dyspnea and palpitation on exertion, and edema of the ankles at night.

Clinical examination showed a poorly nourished woman with loose skin, moist about the ankles. Heart measurements not recorded. Sounds of fair quality. A systolic murmur at the apex. Lungs essentially negative. Pea-sized masses felt superficially in the abdomen, especially on the left side, perhaps fecal. Pelvic examination showed a sense of firmness on the posterior vaginal wall for about two and a half inches. Evidently the rectal mass. Rectal examination showed external hemorrhoids. One inch inside the rectum on the anterior wall the finger met a hard mass extending about as far as the finger could reach, apparently an ulcerated area surrounded by papillomatous growths, the whole infiltrating the wall. Varicose veins of the lower legs. Pupils and knee-jerks normal.

Before operation urine normal, hemoglobin 80 per cent, reds 3,500,000, leukocytes 7,600.

November 30 operation was done. The patient did very well after it. December 12 she was up for twenty minutes for the first time. Immediately after going back to bed she had a very large movement of feces and gas, then suddenly collapsed, became cyanotic, breathed stertorously, and in twenty minutes died.

#### DISCUSSION

BY EDWARD L. YOUNG, JR., M.D.

There is not much to say in the line of diagnosis in this case. It almost seems at times as if it were a voice crying in the wilderness to sug-

gest that when we examine a patient it is worth while to make a rectal examination. The other thing that is said so often, which this only emphasizes the more, is that any change in the normal bowel movements of any person particularly in the cancer age, should result in a very careful investigation. The third thing is that hemorrhoids may be present and be due to a vascular change from a low carcinoma, and that the mere presence of hemorrhoids does not forbid the more serious lesion, that blood from the rectum even though there are hemorrhoids present should demand an investigation because the bleeding may be due to hemorrhoids or may be due to a lesion higher up.

It does not seem to me that on that story and investigation we can possibly make any diagnosis other than carcinoma of the rectum. With that story and with that length of time the only thing to do is to find out on abdominal exploration whether or not anything can be done. It is surprising the number of cases that we see here in which after a long period of time and a long period of neglect an operation which because of the weakened condition of the patient results fatally is shown to have been complete so far as any necropsy findings go, they reveal no carcinoma left behind. So that it is impossible to tell whether or not a given tumor is operable, that is, free from metastasis and free from extension through the wall of the bowel, without exploration. So that here the operation I assume is an abdominal exploration to see whether a colostomy is all that can be offered this patient as a palliation because of the presence of enlarged glands beyond the reach of surgery, or of enlargement of the liver or a colostomy and a first-stage dissection. The only other thing to do is entirely to disregard the question of metastasis and to do a perineal excision, which would seem to me to be hardly justifiable.

DR YOUNG'S PRE-OPERATIVE DIAGNOSIS

Carcinoma of the rectum

PRE-OPERATIVE DIAGNOSIS

Carcinoma of the rectum

OPERATION

Under ether anesthesia a left paramedian rectus splitting incision was made. The peritoneum was opened in the routine manner. On examination of the abdominal contents there was found a carcinomatous mass in the rectum spread out over the pelvic floor. Although slightly mov-

able it seemed unlikely that it could be removed by operation. It was not adherent anteriorly to the pelvic organs, which were normal. There were no metastases in the liver. There were a few regional lymph nodes about the size of peas, but they did not seem definitely pathological. The growth was thought to be inoperable. A loop of the sigmoid was brought up into the wound, the peritoneum and rectus fascia were sutured through the mesentery and a glass rod was also inserted. The peritoneum was sutured to the ends of the gut and the layers closed with interrupted catgut.

FURTHER DISCUSSION

In other words a palliative colostomy was done. From this description I assume Dr Mallory will tell us there was a massive pulmonary embolus. I do not think there is anything to add to this case.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Carcinoma of rectum  
Pulmonary embolism

DR EDWARD L. YOUNG'S DIAGNOSIS

Carcinoma of the rectum  
Pulmonary embolism.

ANATOMIC DIAGNOSES

- 1 *Primary fatal lesion*  
Carcinoma of the rectum with metastases
- 2 *Secondary or terminal lesion*  
Pulmonary embolism
- 3 *Historical landmarks*  
Emphysema.  
Focal atelectasis of the lungs

DR TRACY B. MALLORY: The immediate cause of death was embolism. A long, rather slender friable embolus seven centimeters in length and about half a centimeter in diameter was found in the right heart. The right auricle, the right ventricle, and all the larger branches of the pulmonary artery contained other similar emboli. A carcinoma was found in the rectum, as described in the operative note. Two fairly large lymph nodes were also found quite close to the growth, and in the liver, on the superior surface well up under the diaphragm where it would have been almost impossible to palpate it, was a metastasis nearly five centimeters in diameter.

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## CANCER WEEK IN RETROSPECT

CANCER week has come and gone, and once more we can turn our minds to the multiplicity of medical affairs. The State cancer campaign was well organized and it must have served a useful purpose by installing into the public mind the grave necessity of early diagnosis and early treatment, although the net results will not yet be seen. Such a campaign will, of course, be followed immediately by the appearance in the clinics and in private offices of numerous individuals whose minds will need to be set at rest on the subject of cancer. A few of those will have cancer, the majority will not.

Many more, however, will have received a useful bit of education in this type of pathology which may stand them in good stead at a later date and may even be the means of saving many lives. The campaign will have to be followed by constant, if not spectacular propaganda, for our capacity to forget is greater than our capacity to remember. We must not forget Billy Sun-

day's retort when the criticism was made that "getting religion" was not permanent, it needed to be repeated occasionally. "So," he replied, "does a bath."

On Monday, April 23rd, following a luncheon meeting for the professional groups, a public evening meeting took place in Symphony Hall, and was gratifyingly well attended. The speakers were Dr. Richard Cabot, Dr. W. A. Evans, Governor Fuller, Mayor Nichols and Father O'Connor, who represented Cardinal O'Connell. On Tuesday evening a public meeting was held in Huntington Hall, on Wednesday evening a meeting for nurses at the State House, on Thursday evening a meeting under the direction of the Boston Council of Social Agencies, and on Friday evening a meeting in Ford Hall. In addition radio talks were given on Monday, Tuesday, Wednesday and Thursday.

The shouting and the tumult dies, the captains and the kings depart. We are left with our cancer problem, it is still a problem, but a larger opening wedge has been driven into the wall of public ignorance.

## Headquarters for The Massachusetts Medical Society

### A STATEMENT BY THE PRESIDENT

QUESTIONS have arisen in the minds of some Fellows of the Massachusetts Medical Society as to any possible conflict between the Society in proposing to secure adequate headquarters and the Boston Medical Library.

Nobody questions that the ideal plan would be a medical centre which would house the offices of the Society and the JOURNAL, the Boston Medical Library, and all the other allied organizations and interests which cared to join in such a movement.

The Massachusetts Medical Society must deal today with concrete facts. The present offices of the JOURNAL are inadequate and under frequent conditions almost intolerable. The Society needs adequate headquarters if it is to carry on properly and is to fulfill its obligations to the Fellows and to the public.

The Boston Medical Library needs and for years has needed better and larger quarters. There is no possible chance of these being occupied for several years.

Therefore after conference with representatives of the Library and without objection on their part, the Massachusetts Medical Society undertook to secure funds for adequate headquarters. This action was authorized by the Council on February first and has been fully reported and commented upon in the JOURNAL. The Society does not intend to abandon this undertaking. Neither does it plan to antagonize

or hamper or conflict in any way with the Medical Library

The Society looks forward to the day and hopes it may not be far distant when the Medical Library will be able to have the quarters to which it is entitled. When that day comes the Society hopes that the headquarters of the Massachusetts Medical Society may be under the same roof.

The Fellows of the Society who are now asked to raise the sum of \$125,000 to secure and maintain adequate headquarters may be assured that the Committee on Headquarters of the Massachusetts Medical Society will keep this ideal constantly in mind and will never advocate any move which will conflict with it.

The need today is to raise this sum of money to meet our pressing needs. When the Library is ready to enter upon any plan which may enable it to extend its benefits more widely through the State and to live under the same roof as does the Society, that day will be welcomed with rejoicing by every Fellow of the Massachusetts Medical Society.

JOHN M. BIRNIE

## HOPE DAWNS FOR THE LEPER

OUR attitude towards the leper has changed much since, shunned and outcast, he was banished to a living death amongst the tombs of Hinnon or, roped and belled, was sentenced to a life of wandering among the byways of a mediaeval civilization, it has changed radically since the days of Father Damien, the martyr of Hawaii in whose defense Robert Louis Stevenson's stirring letter was written. Our fear and horror of the disease changed somewhat to pity when its low incidence of communicability was appreciated, a knowledge gained largely through statistics, for in Hawaii, where the health sponsors of lepers were allowed to accompany them to Malokai the incidence of conjugal infection was only two per cent.

The possibility of cures, or at least arrests in the progress of the disease through the later day use of chaulmoogra oil has furthermore allowed a considerable ray of hope to enter into the situation, so that now our attitude towards the disease is one of caring for and treating a curable malady, rather than of banishing for life the victim of a loathsome and incurable affliction.

As a result of this enlightened viewpoint the Leonard Wood Memorial for the Eradication of Leprosy has been formed, and under the national chairmanship of General James G. Harbord is working along definitely progressive lines. Recently General Harbord announced a gift of \$180,000 by Eversley Childs, of New York, to establish a treatment station for the milder cases of leprosy at Cebu, in the Philippine Islands, the new station to consist of laboratories, a medical

center, clinics, wards, a pharmacy, a dispensary for out-patients, cottages for the staff and all other necessary equipment.

The Memorial is moreover pushing a \$2,000,000 campaign in America to promote the cure and eradication of leprosy in the Philippines, and at a luncheon given recently in New York General Harbord announced the receipt of a gift of \$50,000 from the Kane estate, announcing also that \$250,000 of New York's quota of \$500,000 had already been obtained.

The principal speaker at this luncheon was Mrs. Dorothy Paul Wade, wife of an American physician who has spent twelve years treating leprosy in the Philippine Islands. Mrs. Wade told of the Philippine Government's effort to care for its nearly 3,000,000 lepers by spending two per cent of its total income and more than 33 per cent of its entire health appropriation on their care. She told also of General Wood's early years in charge of the Islands, beginning in 1922, when after obtaining an additional appropriation from the legislature he started intensive treatment at Culion, and in three years discharged as cured 449 lepers.

In this country, according to a recent report of Surgeon General Cumming, the National Home for Lepers in Carville, Louisiana, is now caring for 278 patients representing 25 countries. Practically all the inmates are being treated with chaulmoogra oil, and during the past year two were released as arrested cases.

Fifty-six cases were admitted during the year, twelve were re-admitted and seventeen deaths occurred. An average of eighty-one lepers have been engaged in paying occupations at the hospital, ranging from simple housekeeping to work as assistants in the laboratories and operating rooms. A dairy farm with seventy-four milk cows is maintained, a golf course planned, and a concrete tennis court constructed.

The southern states, particularly Louisiana, Florida and Texas, lead in furnishing patients, although in all twenty states, three insular possessions and twenty-four foreign countries are represented.

The leprosarium is frequently visited by physicians and students for the purpose of studying methods employed in the care and treatment of the disease.

## HEALTH HAZARD FROM AUTOMOBILE GAS

THE United States Public Health Service, Surgeon General Cumming announced on April 6, has recently studied air conditions in 14 of the largest cities of the country, having a combined population of over 19,000,000. Over 250 streets, samples of air were obtained, under the most congested traffic conditions, for carbon monoxide analysis. These samples were analysed by the iodine pentoxide method, using a

liquid air cooling tube in order to eliminate gasoline vapor, which tends to nitrate the results of the analysis

The average of 141 tests made in city streets during traffic hours showed a contamination of only 0.8 part of carbon monoxide in 10,000 parts of air, only 24 per cent of the samples showing more than one part of carbon monoxide to 10,000 of air. In only one location, a covered passageway, were there as much as two parts per 10,000. Samples taken inside of auto busses showed a still lower concentration.

The report concludes that automobile exhausts do not constitute a health hazard at the present day in city streets, except possibly to traffic officers during very heavy traffic periods, and this possible hazard may be minimized by shortening the duration of exposure at congested traffic stations.

In 27 garages visited, on the other hand, the average carbon monoxide content of the air was found to be 2.1 parts per 10,000 parts of air, 18 per cent of the samples showing over 4 parts per 10,000. This reveals a dangerous condition, and one which should be taken care of by stringent regulation regarding the time motors may be allowed to run without attaching their exhausts to outlets connected with the outside air. The great danger to life lies in the small private garage and under any circumstances the discharge of an automobile exhaust into a roofed enclosure should be regarded as a hazardous act.

### THIS WEEK'S ISSUE

CONTAINS articles by the following named authors

WATKINS, ROYAL P. A.B., M.D. Columbia University College of Physicians and Surgeons, 1892. F.A.C.S. Surgeon to Worcester City Hospital, Consulting Surgeon to Fairlawn Hospital, Louis Pasteur Hospital and Holden Hospital. His subject is "Acute Pancreatitis." Page 605. Address 29 Pearl Street, Worcester, Mass.

HUNT, ERNEST L. M.D. Harvard Medical School, 1902. F.A.C.S. Associate Medical Examiner, 11th District Worcester County, President Massachusetts Medico-Legal Society, Surgeon and Director Surgical Division, Worcester City Hospital, Consulting Surgeon, Holden District Hospital, Worcester State Hospital, Urologist, Fairlawn Hospital. His subject is "Pancreatitis, Acute and Subacute." Page 610. Address 20 Kenilworth Road, Worcester, Mass.

HUTCHINS, HENRY T. A.B., M.D. Johns Hopkins, 1903. F.A.C.S. Surgeon-in-Chief, Massachusetts Women's Hospital, Consulting Gynecologist, Symmes Arlington Hospital, Memorial Hospital, Chelsea, Mass., Memorial Hospital, Pawtucket, R.I. His subject is "Radical Pel-

vic Surgery." Page 616. Address 520 Commonwealth Avenue, Boston.

O'BRIEN, FREDERICK W. A.B., M.D. Medical School, 1911. Associate Professor Radiology, Tufts College Medical School, Roentgenologist, Boston City Hospital, Bridge Municipal Hospital and Boston Sanatorium. His subject is "Radiation and Electromy in Superficial Lesions." Page Address 465 Beacon Street, Boston.

LOMBARD, HERBERT L. A.B., M.P.H., Bowdoin, 1915. Epidemiologist and Chief of the Cancer Section, Massachusetts Department of Public Health. Address 546 State I Boston. Associated with him is

SCAMMAN, CLARENCE L. A.B., M.D. Boston Medical School, 1912. C.P.H. Harvard, School of Public Health, Director Division of Communicable Diseases, Massachusetts Department of Public Health, Associate to Administration, Harvard School of Public Health. Address Room 546, State House, Boston. Their subject is "A Morbidity Survey of Shelburne Buckland." Page 625.

YAKOVLEV, PAUL I. A.B., M.D. Military Medical Academy, Petrograd, Russia, 1919. Faculty of Medicine, University of Paris, France, Senior Assistant Physician (Pathologist) Monson State Hospital, Palmer, Mass. His subject is "Epilepsy and Parkinsonism." Page 629. Address Drawer F, Palmer, Mass.

VOSE, SAMUEL N. M.D. Boston University School of Medicine, 1918. F.A.C.S. Instructor in Genito-Urinary Surgery, Boston University School of Medicine, Visiting Surgeon, Genito-Urinary Department, Massachusetts Hospital, Assistant Surgeon, Boston Dispensary, Consulting Urologist, Evans Memorial Hospital, Boston. His subject is "A New Instrument for the Cystoscopic Removal of Ureteral Calculi." Page 638. Address 15 State Road, Boston.

BALLARD, JAMES F. Assistant Librarian, Boston Medical Library. His subject is "A Note on Two Rare Anatomical Fungus Sheaths." Page 639. Address 8 The Fenway, Boston.

### TRANSPORTATION TO THE MEETING OF THE A. M. A.

THE Annual Meeting of the American Medical Association is to be held in Minneapolis June 11-15, the week after the meeting of the Massachusetts Medical Society in Worcester.

The delegates and others who wish to be in Minneapolis early on Monday, June 11, are being invited in a special car early Saturday morning. They will reach Minneapolis in time for the Monday session of the House of Delegates.

In order to simplify the trip and enable

members of the Societies of the New England States to travel together the Executive Secretary of the Massachusetts Medical Society will undertake to secure other special cars provided enough reservations are made promptly

Probably most members would prefer to leave Boston Sunday afternoon at 3 15 Standard time (4 15 p m Massachusetts time), arrive in Chicago at 2 15 p m Monday and leaving Chicago at about 6 30 p m to arrive in Minneapolis at about 8 a m Tuesday

If the members of any State Medical Societies of New England wish to make reservations for accommodations in special cars it is requested that they fill in the blank below and mail it at once to the Executive Secretary of the Massachusetts Medical Society

Fill tear out and mail at once\*

To the Executive Secretary  
Massachusetts Medical Society  
126 Massachusetts Avenue  
Boston

\_\_\_\_\_ of \_\_\_\_\_  
street town

\_\_\_\_\_ a member of the \_\_\_\_\_ State  
State

Medical Society wishes { upper berth  
lower berth  
compartment

in a special car leaving Boston Sunday afternoon June 10, for Minneapolis It is understood that this is subject to securing a sufficient number of applications by May 16th

\*If mutilation of the JOURNAL is objectionable make copy and forward

## The Massachusetts Medical Society

### SECTION OF OBSTETRICS AND GYNECOLOGY

Foster S Kellogg, M D Frederick L Good M D  
Chairman Secretary  
Frederick J Lynch M D., Clerk

### *The Use of Magnesium Sulphate in the Toxemias of Pregnancy*

The use of magnesium sulphate solution, both intra-venously and intra-muscularly, has increased markedly in the treatment of toxemias in recent times. It is now used extensively both in preventing true toxemia or eclampsia, and also in true eclampsia or when the convulsions have started. The results obtained have established this drug as being important in the modern treatment of this most distressing complication of pregnancy

All the statistics available are not uniform in their conclusions, but they do show that there is merit in the use of this drug, that it is safe, and that even in cases which do not respond in all respects to the good results expected, no unfavorable complications arise

It has been proved, both experimentally and practically, that a solution of magnesium sulphate will reduce visible edema, and probably cerebral edema, will reduce the blood pressure, will increase the output of urine, and in the convulsive stage will usually stop the fits or at least limit them, both as to number and severity. Magnesium sulphate also causes a relaxation of voluntary muscles, but apparently has little or no effect on involuntary muscles, particularly of the uterus

In the preventive treatment of toxemia of pregnancy, or in the pre-eclamptic stage, the intra-venous use of the 10% solution of magnesium sulphate has given the best results. This is used in addition to the usual pre-eclamptic treatment, in an attempt to prevent the occurrence of convulsions and coma. The amount given may vary from 10 cc to 25 cc at a given dose. The usual dose is 20 cc of a 10% solution, which nearly always gives immediate relief from subjective symptoms. These injections may be repeated daily if necessary, and in one series of cases, reported a patient received twenty-four injections of 20 cc over a period of twenty-three days

In the true eclamptic stage, or when convulsions have started one injection of 20 cc of a 10% solution will generally stop the attacks. It may be and usually is necessary, especially in severe cases, to repeat the injection, both for the control of the convulsions and for the relief of other toxic symptoms. Generally one or two injections are sufficient, but as many as eight in twenty-four hours have been given. In this type of case the use of morphine, chloral, paraldehyde or luminol is advised in addition to the magnesium sulphate. Also it is customary that the common methods of treatment be instituted such as hospitalization if possible, complete rest, additional stimulation of the excretory organs, and in a few cases venesection

The intra-muscular use of magnesium sulphate is not as common as is the intra-venous. The strength of the solution is generally 25% and the amount injected may be as high as 100 cc in twenty-four hours. The average dose is 15 cc of a 25% solution which is injected deep in the gluteal muscle. This may be repeated as often as every hour, but it is seldom necessary to give it at such short intervals. This method of using the magnesium sulphate solution practically excludes the use of the other sedatives commonly used, namely, morphine, chloral, luminol, etc. If it is anticipated that large doses of magnesium sulphate intra-muscularly are to be used it is well to be prepared to give 1 cc of calcium chloride intra-venously, because of the possibility of respiratory disturbance

There is still another method of administering this drug in eclampsia, which is almost universally used in true eclampsia. In this method, after a gastric lavage, two ounces of a

50% solution is introduced into the stomach through the stomach tube and allowed to remain

Questions of a similar nature to the foregoing will be discussed in the *JOURNAL* each week. They may be addressed to the Clerk of the Committee, in care of the *JOURNAL* and will be answered by members of the Committee of the Section of Obstetrics and Gynecology

### BOSTON MEDICAL LIBRARY

THE part played by the early publishers of books in advancing medical practice is but little appreciated, largely because we of this generation, have so little knowledge of the difficulties under which they labored. Great as was the invention of the printing press, of almost equal importance was it that those who took advantage of this means of disseminating knowledge should have been men who were of sufficient discrimination and scholarship to select the most significant manuscripts for reproduction and distribution. At the same time they must needs have been men of strong character as shown by their willingness to risk censure from those who saw in the diffusion of knowledge a threat to a class who had acquired prestige through the possession of information not generally held. Even more serious was the hostility of the Church, whether Roman or Protestant, for life itself was jeopardized and very many paid this penalty.

Servetus was brought to the stake by John Calvin because he ventured to introduce his observations upon the pulmonary circulation into a book on religion and philosophy. He, to be sure, was not a publisher but the ban of the Church was directed no less rigorously against printers and publishers than it was against authors and those in whose possession heretical books were found. It was far from an attractive business adventure in the early days and those who embarked upon such projects were actuated more by a desire to spread the knowledge stored up in the manuscript literature of the world than by the prospect of financial gain accruing to themselves. There were few ways of communication from one country to another and such as there were, were irregular and hazardous. One often was obliged to wait for long periods before opportunity would offer for the sending of books or the manuscripts wanted for publication. Though the thirst for knowledge rapidly developed, at first in any one community there were comparatively few who could be counted upon as prospective book buyers.

The University towns where a publisher might reasonably expect to create the greatest demand for his wares were the very places where censorship would be most stringently exercised not only upon the books issuing from the press but

upon the manuscripts which they were permitted to set in type. The history of the conduct of the business of the early publishers is one of frequent removal from place to place with attendant financial loss and though, in respect to many of them, there are few records extant of the profits of such business, still it is probable that they were obliged to take a good deal of the reward for their effort in the satisfaction that must have come from seeing the world grow apace. Inasmuch as a major part of the manuscripts used by these early printers are in Latin, Greek or Arabic the expense of making the fonts of type for such work was considerable. When it became the fashion to print small, handy editions rather than the tall folios many publishers issued books from their presses at what would be called in these days "popular prices" i.e. as low as forty cents of our money.

Another item of expense was connected with the necessity for paying scholars to edit the manuscripts that were to be used. In certain houses this item was largely eliminated by the fact that the publishers themselves were often scholarly. This was notably true of Aldus, some of the Estiennes and the earlier Elzevirs. The, in the main, high character of the material published as indicated in the catalogues prepared for the Frankfort Fair, where all the early printing houses sent representatives annually, emphasizes the importance of giving any new movement the right start.

Some of the significant recent literature on Epidemiology (particularly of infantile paralysis) is added and a few books bearing the imprint of the earlier publishers of medical works above referred to will be on exhibition in Holmes Hall during the week of May 14th.

#### EPIDEMIOLOGY—INFANTILE PARALYSIS EPIDEMICS

- 1 Brooks R (1722)—History of Pestilential Distempers etc 1 M K 257 No 6
- 2 Brown E (1844)—Influence of Commercial Prosperity on Epidem 11 A
- 3 Burdoch C F (1798)—Commentarii in Hippocrates librorum primum de morbis epidemicis specimen 40 P V 71-No 8
- 4 Caldwell C (1801)—Medical memoirs & inquiry into origin of pestilential epidemics of the U S Pp 6 V121 No 6 1 HA20
- 5 Colin L (1879)—Traite des Maladies Epidemiques etc 11 A 103
- 6 Dujardin Baumetz (1887)—Rochart sur les epidemics pendant l'armes 1885 11 A H 6 No 2
- 7 Free Thinker (the) (1721)—Considerations on the nature, causes etc of pestilences—a collection of published papers 11 A 95
- 8 Grove J (1850)—Epidemics examined and explained 11 A 298

- 9 Howes W H (1906)—Milrov lectures on epidemic disease—evidence of variability and persistency of type 11 A 250
- 10 Hippocrates—Epidemical Disease etc 11 A 111
- 11 Hough L S (1849)—The Science of man applied to epidemics 11 A 232
- 12 Lersset B M (1896)—Geschichte der Volkssennen etc 1 A H 18
- 13 Lawson R (1888)—Milrov Lectures Epidemic Influences 11 A 76
- 14 Parkin J (1887)—Volcanic origin of epidemics 11 A 127
- 15 Prinzing F (1916)—Epidemics resulting from wars 11 A 260
- 16 Adams J (1809)—Epidemics Causes and prevention 11 A 53
- 17 Parkin J (1880)—Epidemiology w 2nd ed (1873) 11 A H 6
- 18 Haeser A (1839-41)—Historische pathologische unter suchanger
- 19 Haeser A (1911)—History of Epidemics—Epidemische Krontkeiten 11 A L
- 20 Creighton C—A history of epidemics in Britain 11 A 209 2nd
- 21 Dods A—A historical dissertation 11 A H 10
- 22 Rees W (1920)—The Black Death of Wars 11 A H 12
- 23 Simonini R—History and statistics of epidemics 11 A H 1
- 24 Weichselbaum A—Epidemiology 11 A H 173
- 25 Walsh F M R—Epidemiology British Medical Journal 2 347-349 Aug 27
- 26 Lennon G T—Epidemic, Haverhill, Mass, Boston Medical and Surgical Journal 197 916-920 Nov 27
- 27 Ichon G—Review d' Hygiene, General Review with Statistics 49 121-129 Feb 27
- 28 Wernsted W—Epidemics in Sweden, International Clinics 4 75-86 Dec 27
- 29 Avecock W L—Milk-borne Epidemics, American Journal of Hygiene 7 791-898 Nov 27
- 30 Russum & Houlton—Epidemic of Omaha 1925, Medical Herald 46 245-249 Sept 27
- 31 Bartlett—Recent Outbreak, Nebraska Medical Journal 12 457-458 Dec 27
- 32 Chasanoff M—Epidemic in White Russia, Zeitschrift für des Gesamte Neurologie and Pchiatrie 104 653 666 1926
- 33 Collier J—Epidemiology and Pathology, British Medical Journal 1 751-753 4 '23' 27
- 34 Avecock W L—Epidemiology, American Medical Assoc Journal 87 75-79 July 10 '26
- 35 Knapp Godfrey & Avecock—Milk-borne Epidemic, Journal American Med Assoc 87 635 639 Aug 28 '26

## MISCELLANY

### THE NEW METROPOLITAN HOSPITAL

Dr George M Kline Commissioner of the Massachusetts Department of Mental Diseases has written in the *Monthly Bulletin* of the Massachusetts Society for Mental Hygiene of the need of additional hospital facilities for the mentally ill particularly for the Metropolitan District, which resulted in the initial appropriation by the Legislature of 1927 of one and a half million dollars for this purpose. A site had already been acquired lying in part in Waltham Belmont and Lexington and it was determined that the construction of this hospital should be based upon the actual need of patients and the communities from which they are to be drawn. A survey was consequently made of the fifteen institutions under the supervision of the Department, and in addition all discharges from the Danvers State Hospital for the past ten years—about 7 000 cases—were reviewed.

Dr Neil A. Davton directed this survey with the assistance of an advisory committee consisting of Edwin B Wilson Professor of Vital Statistics Harvard School of Public Health Dr James V May Superintendent, Boston State Hospital Dr C Macfie Campbell Director Boston Psychopathic Hospital and Dr Henry B Elkind Medical Director, Massachusetts Society for Mental Hygiene.

Work on the new hospital has already been begun contracts having been awarded for an administration building a nurses home for 150, and three continued treatment buildings each of 152 beds.

The hospital is to consist of two large units, one for acute and for continued treatment to be situated on knolls with between them the service facilities of the hospital. On either side of the reception building will be located buildings for disturbed patients. At the opposite end of the quadrangle of the acute group will be the hospital building in which patients from both groups will receive treatment for physical conditions.

Special efforts are being made to avoid the appearance of a custodial institution and in order that the new hospital will be of the most modern type a careful study of hospital construction throughout the country has been made.

### MENTAL DISEASES IN THE UNITED STATES

The United States Department of Commerce has recently published a preliminary report of a census of State and Federal hospitals for mental diseases in 1926. Complete returns from 30 States covering 105 hospitals showed 36 936 first admissions in 1926 as compared with 34 362 in 1922 or an increase of 7.5 per cent. The number of first admissions has increased only a little more rapidly than the general population however. New Hampshire and the District of Columbia had the highest rate of first admissions in 1926.

In summarizing the report the modern hospital points out that the increase in the number of first admissions may represent an expansion of hospital facilities rather than an increase of mental disease.



50% solution is introduced into the stomach through the stomach tube and allowed to remain

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## MASSACHUSETTS LEGISLATIVE NOTE

Senate bill No 323 provides for the investigation by the commissioner of public health relative to the manufacture of bedding and upholstered furniture

## OBITUARIES

### AYRES P MERRILL, M D

Dr Ayres P Merrill of 519 North Street, Pittsfield, died May 2 at the House of Mercy Hospital

He was graduated from Dartmouth Medical School in 1905 In Pittsfield he was engaged in general practice and had charge of the XRay Department



AYRES P MERRILL M D

at the House of Mercy Hospital paying especial attention to orthopedics Dr Merrill had served as the President of the Berkshire District Medical Society and was Secretary of that district at the time of his death.

His illness began on April 26 in Boston while visiting there for the purpose of testifying in a court case When he returned home, although ill he attended a meeting of the House of Mercy Hospital Staff, but upon the advice of Dr Bruce W Paddock remained at the hospital that night An operation was performed next morning for conditions which may have resulted from an operation for appendicitis twenty five years ago

Dr Merrill conducted a very successful campaign for the entertainment of the Massachusetts Medical Society in Pittsfield in 1923, thus breaking the custom which had been in practice for several years of holding the annual meeting in Boston The success of his efforts was so marked that since that time one other meeting of the Society has been held outside of Boston and plans are being made for the next meeting in Worcester

During his student life at Dartmouth Dr Merrill completed a four years course in three years and was given the distinction of honor student. At one time he served the New Hampshire State Board of Health as bacteriologist when the regular incumbent was away

He did much experimenting and research work in physics in his shop in the rear of his North Street home

Dr Merrill's health had not been good during the

past year but it was hoped that he would be able to recover from that disability which had necessitated his relief from active work for a time

Dr Merrill is survived by his parents, Mr and Mrs Charles E Merrill, and a sister, Mrs Charles L Barker of California

He was interested in sports and was a member of the Mystic Lodge of Masons, Y M C A., Park Club and Berkshire Hills Country Club

Dr Merrill was born in 1877 He was a conscientious and devoted worker in the field of medicine and was especially loyal to and interested in the affairs of the Massachusetts Medical Society

A very appreciative editorial has been published in one of the local papers in which tribute is paid to his profound sympathy for the children coming under his care, his unbounded energy, his knowledge of mechanics which he applied to the treatment of his cases, and his maintenance of the buoyancy and zest of youth His hold on the affections of his fellow doctors and the community was unlimited

### AMASA ELLIOT PAINE M D

Amasa Elliot Paine, the son of Amasa and Susan nah Paine was born in Truro Mass in 1843 and was educated in the common schools and Truro Academy

He entered Harvard Medical School in the spring of 1862 and in August of that year he enlisted (from Truro) for nine months being assigned to Company E 43rd Regiment and was later transferred to the regimental hospital His regiment was discharged July 30, 1863, and he returned to Harvard Medical School in October where he continued his studies until June 1864, when he re-enlisted, was appointed a Medical Cadet and assigned to Mt Pleasant Hospital in Washington D C While there he was able to pursue his studies at Georgetown University Medical School from which he graduated in 1865 and in August of that year was promoted to the position of Assistant Surgeon to 104th Regiment Colored Volunteers, stationed at Beaufort, S C and in February 1866 was discharged from the service He then returned to Cape Cod and entered upon the practice of medicine in Wellfleet In May 1867 he married Lucie W Ritter of Washington D C and moved to Taunton where he continued his practice until September when he removed to North Bridgewater now Brockton in which place he resided up to the time of his death September 30 1927

In 1877, with the passing of the coroner and the establishment of the Medical Examiner system Dr Paine was appointed Medical Examiner by Governor Rice for the First Plymouth District which position he creditably held for forty nine years resigning when his failing health rendered him unable to perform its duties He had previously served as Town Physician and as a member of the Board of Health of the City of Brockton

He was actively interested in the affairs of the Brockton Hospital having served on its Executive Board as well as Chairman of the Consulting Board

He was affiliated with the American Medical Association He held membership in the Massachusetts Medical Society since 1872 was President of the District Society in 1891 1892 and served as Councillor for many years

In the Massachusetts Medico-Legal Society of

COMPARISON OF DISEASE INCIDENCE IN CONNECTICUT  
WITH 1927 AND SEVEN YEAR AVERAGE  
MONTH ENDING APRIL 14

1928

1927

	Wk. ending Mar. 24	Wk. ending Mar. 31	Wk. ending Apr. 7	Wk. ending Apr. 14	Average cases reported for week corresponding to April 14 for past seven years	Wk. ending Mar. 26	Wk. ending Apr. 2	Wk. ending Apr. 9	Wk. ending Apr. 16
Actinomycosis	-	-	-	-	-	-	-	-	-
Anthrax	-	-	-	-	-	-	-	-	-
Botulism	-	-	-	-	-	-	-	-	-
Cerebrospinal Men.	1	1	3	-	1	-	-	2	1
Chickenpox	90	81	85	64	46	131	85	80	44
Conjunctivitis Inf.	-	2	-	-	4	-	-	-	7
Diphtheria	23	39	25	23	33	20	20	35	21
Dysentery, Amoebic	-	-	-	-	-	-	-	-	-
Dysentery, Bacillary	-	-	-	-	-	-	-	-	-
Encephalitis, Epid.	-	1	-	1	2	-	1	1	1
Favus	-	-	-	-	-	-	-	-	-
German Measles	-	6	9	4	13	11	14	17	10
Hookworm Infection	-	-	-	-	-	-	-	-	-
Influenza	7	11	9	13	53	21	11	7	6
Leprosy	-	-	-	-	-	-	-	-	-
Malaria	-	-	-	-	-	-	-	-	-
Measles	301	317	371	369	221	115	102	95	77
Mumps	221	275	285	172	49	45	46	30	28
Paratyphoid Fever	-	-	-	-	-	-	-	-	1
Pneumonia (Broncho)	45	36	34	22	52*	51	31	32	33
Pneumonia (Lobar)	81	61	80	48	52	66	50	45	51
Poliomyelitis	-	-	-	-	-	-	1	-	-
Scarlet Fever	55	222	95	57	91	136	94	101	85
Septic Sore Throat	1	1	3	2	1	3	2	1	4
Smallpox	-	-	-	-	2	-	-	-	-
Tetanus	1	-	-	-	-	-	-	-	-
Trachoma	-	2	-	-	-	-	-	-	-
Trichinosis	2	-	2	2	-	-	-	-	-
Tuberculosis (pul.)	32	32	30	34	35	32	32	32	26
Tuberculosis (o.f.)	4	5	3	2	5	1	2	4	5
Typhoid Fever	1	1	1	3	1	1	-	-	1
Typhus Fever	-	-	-	-	-	-	-	-	-
Whooping Cough	130	97	111	94	61	47	38	36	26
Gonorrhoea	19	30	39	20	16	13	43	33	3
Syphilis	41	45	64	39	29	19	26	25	10

\*Average for three years. Made reportable January 1, 1925. Remarks. No cases of cholera, Asiatic, glanders, plague, rabies in humans and yellow fever during the past seven years.

## MASSACHUSETTS LEGISLATIVE NOTE

Senate bill No 323 provides for the investigation by the commissioner of public health relative to the manufacture of bedding and upholstered furniture

## OBITUARIES

### AYRES P MERRILL M D

Dr Ayres P Merrill of 519 North Street, Pittsfield, died May 2 at the House of Mercy Hospital

He was graduated from Dartmouth Medical School in 1905 In Pittsfield he was engaged in general practice and had charge of the X Ray Department



AYRES P MERRILL M D

at the House of Mercy Hospital paving especial attention to orthopedics Dr Merrill had served as the President of the Berkshire District Medical Society and was Secretary of that district at the time of his death.

His illness began on April 26 in Boston while visiting there for the purpose of testifying in a court case When he returned home although ill he attended a meeting of the House of Mercy Hospital Staff but upon the advice of Dr Bruce W Paddock remained at the hospital that night. An operation was performed next morning for conditions which may have resulted from an operation for appendicitis twenty five years ago

Dr Merrill conducted a very successful campaign for the entertainment of the Massachusetts Medical Society in Pittsfield in 1923, thus breaking the custom which had been in practice for several years of holding the annual meeting in Boston The success of his efforts was so marked that since that time one other meeting of the Society has been held out side of Boston and plans are being made for the next meeting in Worcester

During his student life at Dartmouth Dr Merrill completed a four years course in three years and was given the distinction of honor student At one time he served the New Hampshire State Board of Health as bacteriologist when the regular incumbent was away

He did much experimenting and research work in physics in his shop in the rear of his North Street home

Dr Merrill's health had not been good during the

past year but it was hoped that he would be able to recover from that disability which had necessitated his relief from active work for a time

Dr Merrill is survived by his parents, Mr and Mrs Charles E Merrill, and a sister, Mrs Charles L Barker of California

He was interested in sports and was a member of the Mystic Lodge of Masons, Y M C A., Park Club and Berkshire Hills Country Club

Dr Merrill was born in 1877 He was a conscientious and devoted worker in the field of medicine and was especially loyal to and interested in the affairs of the Massachusetts Medical Society

A very appreciative editorial has been published in one of the local papers in which tribute is paid to his profound sympathy for the children coming under his care, his unbounded energy, his knowledge of mechanics which he applied to the treatment of his cases, and his maintenance of the buoyancy and zest of youth His hold on the affections of his fellow doctors and the community was unlimited

### AMASA ELLIOT PAINE M D

Amasa Elliot Paine the son of Amasa and Susan nah Paine was born in Truro Mass in 1843, and was educated in the common schools and Truro Academy

He entered Harvard Medical School in the spring of 1862 and in August of that year he enlisted (from Truro) for nine months being assigned to Company E 43rd Regiment and was later transferred to the regimental hospital His regiment was discharged July 30, 1863, and he returned to Harvard Medical School in October where he continued his studies until June 1864 when he re-enlisted was appointed a Medical Cadet and assigned to Mt Pleasant Hospital in Washington D C While there he was able to pursue his studies at Georgetown University Medical School from which he graduated in 1865 and in August of that year was promoted to the position of Assistant Surgeon to 104th Regiment Colored Volunteers stationed at Beaufort S C, and in February 1866 was discharged from the service He then returned to Cape Cod and entered upon the practice of medicine in Wellfleet In May 1867 he married Lucie W Ritter of Washington, D C, and moved to Taunton where he continued his practice until September when he removed to North Bridgewater now Brockton in which place he resided up to the time of his death September 30 1927

In 1877 with the passing of the coroner and the establishment of the Medical Examiner system Dr Paine was appointed Medical Examiner by Governor Rice for the First Plymouth District which position he creditably held for forty nine years resigning when his failing health rendered him unable to perform its duties He had previously served as Town Physician and as a member of the Board of Health of the City of Brockton

He was actively interested in the affairs of the Brockton Hospital having served on its Executive Board as well as Chairman of the Consulting Board

He was affiliated with the American Medical Association He held membership in the Massachusetts Medical Society since 1872 was President of the District Society in 1891 1892 and served as Councillor for many years

In the Massachusetts Medico-Legal Society of

which he was the last surviving charter member, he served as its Treasurer

He was a member of the Loyal Legion, also the Massasoit Lodge, I O O F, Fletcher Webster Post, G. A. R., and the Commercial Club all of Brockton

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Surviving comrades testify as to his wise counsels and helpfulness to the soldiers while in the service which won their highest regard

He was actively interested in all the organizations with which he was affiliated and was rarely absent from his regimental reunions where he took keen delight in reminiscing on Civil War experiences with old comrades

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On November 23 1915, at a banquet at the Commercial Club in Brockton the Plymouth District Society honored Dr Paine and four other members who had practiced medicine for fifty years all of whom were veterans of the Civil War The toast then tendered them we now offer as a tribute to his memory

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Diabetic studies on proteid metabolism show that proteids absorbed from the alimentary canal as amino-acids first replace the body loss of proteids by reuniting into proteids as body protoplasm and then the remaining acids, after being deaminized, split up into 58% carbohydrates and 44% fatty acids In this way the original proteid food in the course of metabolism supplies the body with carbohydrates and fats just as perfectly as if they were eaten in the form civilized man has adopted

For a man of 70 K weight at moderate work the normal diet is as follows

#### Normal Diet

P	C H.	F
100	400	100 Gms
4	4	9
400	1600	900 calories

#### Total 2900 calories

If meat alone is used, 377 ounces of lean meat must be consumed to produce 2900 calories since each ounce of meat contains 8 gms P and 5 gms F, equalling 77 calories If such an amount is eaten 3016 gms P and 1885 F will be supplied to the economy

#### Meat Diet

P	F
3016 Gms	1885 Gms
58% 1749	1327
44% 1327	831
From Fats 207	From Proteids 321
207 Gms C H	321 Gms F

Proteids during their metabolism produce 58% CH (1749 gms) and 44% F (1327 gms) Adding the fats together we have 3212 F but fats during their metabolism convert 10% (321 gms) to glucose, which added to 1749 CH gives 207 gms CH as a total This loss of fats to glucose reduces the fats to 289 gms F as a total So that the final ratio of CH to F is 207 gm 289 gm. As this is well below Woodratt's ratio of 1:15 no acidosis would result.

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It is possible since Stefansson after living for seven years continuously on meat alone shows no signs of rheumatism gout nephritis or high blood pressure that our ideas on meat feeding need some

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Swan Myers Co—Ephedrine Swan Myers Ephedrine Inhalant Swan Myers  
Winthrop Chemical Co Inc—Phanodorn Tablets 3 grains

Yours truly

W A PUCKNER Secretary

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Pneumonia may be caused by any one or any combination of a number of organisms which cause an inflammation of the lung and should be considered as closely related to that group of acute diseases whose common feature is a local manifestation in an inflammatory process in the lungs It is endemic everywhere in the world although all countries are not affected to the same degree Its virulence is not the same in all countries, or in all parts of the same country nor is it the same every year It is a seasonal disease the morbidity usually increasing in cold or wet seasons It is more common in cities than in the country the ratio being about fifty per cent greater in the former

In the United States pneumonia ranks first in the list of acute communicable diseases as a cause of mortality and has been termed the captain of the men of death On the one hand there is plenty of proof of the prevalence and high case mortality but information is very imperfect as to cause prevention or cure

From the public health point of view the specific character of the disease or the particular organism that causes it, makes little difference in view of the possibility of contact infection This possibility is sufficiently well established to justify one step toward control namely isolation of the patient, and modified quarantine of the premises

In Pittsburgh many secondary cases of pneumonia in the same household were reported to the Board of Health and the result was an investigation by the authorities During March, 1924 the month preceding the establishment of the quarantine twenty-two

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Meat Diet	
P	F
301.6 Gms	188.5 Gms
58% 174.9	132.7 from Proteids
44% 132.7	321.2
From Fats	2.1 to glucose, 10%
207 Gms C. H.	289.1 Gms F

Proteids during their metabolism produce 58% CH (174.9 gms) and 44% F (132.7 gms). Adding the fats together we have 321.2 F, but fats during their metabolism convert 10% (32.1 gms) to glucose which added to 174.9 CH gives 207 gms CH as a total. This loss of fats to glucose reduces the fats to 289 gms F as a total. So that the final ratio of CH to F is 207 gm. 289 gm. As this is well below Woodyatt's ratio of 1:1.5 no acidosis would result.

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The Cheney Chemical Co—Ethylene-Chenev  
E Fougere & Co—Lipiodol Lafay Lipiodol Radiologique Descendant Lipiodol Radiologique Ascendant

Mead Johnson & Co—Mead's Powdered Borable Protein Milk.

Swan Myers Co—Ephedrine Swan Myers Ephedrine Inhalant Swan Myers

Winthrop Chemical Co Inc—Phanodorn Tablets 3 grains

Yours truly

W A PUCKNER Secretary

## NEWS ITEMS

### MEDICAL ZOOLOGY

The fourth of a series of key catalogues on medical zoology published by the United States Public Health Service and consisting of Bulletin 150 Hygienic Laboratory, covers in detail insects in their relation to health and disease both as external parasites and as transmitters of disease The bulletin takes up the subject in great detail and is thoroughly cross indexed

A HEALTH WEEK DEMONSTRATION IN LYNN—As a Health Week demonstration a luncheon was held at Pythian Castle Lynn at 12 15 o'clock on Wednesday April 25, 1928 sponsored by the Federated Women's Clubs of Lynn Dr William T Hopkins Commissioner of Public Health of Lynn acted as chairman and introduced the following speakers Dr George H Bigelow Commissioner of Public Health for the Commonwealth, Dr Murray P Horwood of Boston who spoke upon Child Tuberculosis Dr Francis Carter Wood of New York City who spoke upon Cancer and Mr Carl Schrader who talked upon organized play for children and adults

The meeting was largely attended taxing the capacity of the hall

## NOTICE

### THE HOUSEHOLD NURSING ASSOCIATION

Miss Katherine Shepard Superintendent of the Household Nursing Association 222 Newbury Street Boston is preparing new notices in regard to a Maternity Service in Boston and vicinity that will be within the means of those who cannot afford to go to a hospital A graduate nurse is provided and an attendant nurse if necessary for after care The attendant nurses of the association are supervised

by graduate nurses and have been thoroughly instructed on how to care for mother and baby

Miss Beatrice C Holland is in charge of the maternity service

## REPORTS AND NOTICES OF MEETINGS

### MEETING OF THE MASSACHUSETTS ASSOCIATION OF BOARDS OF HEALTH

The quarterly meeting of the Massachusetts Association of Boards of Health in Boston on Thursday, April 26 had for its topic, Pneumonia Quarantine in Pittsburgh the subject being introduced by Dr Philip E Marks Superintendent of the Pittsburgh Bureau of Infectious Diseases, and the discussion begun by Dr Hans Zinsser of the Harvard Medical School The original presentation of the general statement was by Dr C J Vaux Director of the Department of Public Health Pittsburgh, since deceased, in a paper before the Lackawanna County Medical Society at Scranton Penn \* and a review of the experiment was given by Dr H J Benz, Superintendent of the Pittsburgh Bureau of Child Welfare, at the Cincinnati meeting of the American Public Health Association †

Dr Marks said that the control of morbidity and mortality of pneumonia is one of the major problems in this country Research has accomplished but little toward definite establishment of relationships of climate infectiousness environment, or the effect of the personality of the individual while laboratory work is in a very incomplete condition

Pneumonia may be caused by any one or any combination of a number of organisms which cause an inflammation of the lung and should be considered as closely related to that group of acute diseases whose common feature is a local manifestation in an inflammatory process in the lungs It is endemic everywhere in the world although all countries are not affected to the same degree Its virulence is not the same in all countries or in all parts of the same country, nor is it the same every year It is a seasonal disease the morbidity usually increasing in cold or wet seasons It is more common in cities than in the country the ratio being about fifty per cent greater in the former

In the United States pneumonia ranks first in the list of acute communicable diseases as a cause of mortality and has been termed the captain of the men of death On the one hand there is plenty of proof of the prevalence and high case mortality, but information is very imperfect as to cause prevention or cure

From the public health point of view the specific character of the disease or the particular organism that causes it, makes little difference in view of the possibility of contact infection This possibility is sufficiently well established to justify one step toward control namely, isolation of the patient, and modified quarantine of the premises

In Pittsburgh many secondary cases of pneumonia in the same household were reported to the Board of Health and the result was an investigation by the authorities During March, 1924 the month preceding the establishment of the quarantine twenty-two

\*Published in the Journal of the A. M. A., December 11 1926  
†Published in the American Journal of Public Health April 1928

multiple deaths from pneumonia were investigated. Generally laboratory data were lacking, but the direct contact of a well person with one sick with pneumonia, who in turn became ill with the disease within a few days, was completely authenticated.

The following reasons were fundamental in coming to the decision to establish quarantine—Pittsburgh was charged in 1923 with having the highest pneumonia mortality rate of any city in the country, in preventive medicine practically nothing had been accomplished toward reducing the morbidity from pneumonia, and finally the suggestion of quarantine was approved by the local medical organizations.

The group of reportable pneumonias was made all inclusive, naming five general groups, lobar, broncho, complicating influenza, complicating other communicable diseases and all other forms, such as traumatic, anesthetic, senile, etc. The quarantine is a modified one, optional in some cases with the health department, and may include placarding, isolation of patient, prohibition of visitors, with no restrictions on the members of the household including school children, providing the isolation is complete and instructions are properly carried out. No definite number of days for quarantine is specified, the period being until the recovery of the patient or his death.

Complete sanitary cleansing of premises is required before release. No funeral restrictions are imposed.

The following table gives some comparative figures for deaths from all forms of pneumonia. 1923 was the last year of no quarantine, in 1924 the quarantine was in force for nine months, and 1925 was the first full year of quarantine.

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Dr Marks frankly admitted that quarantine is not the whole story by any means, but presented his figures for what they are worth. He argues that isolation and quarantine are a valuable first step toward control, and, indeed, essential. A second step is suggested in an interest aroused in the public and among physicians toward prevention. A third step is the organized study in centers of population so that preventive measures found to be effective may be adopted. It is possible, as a community effort, to conduct the study on a large scale, but it must be thoroughly scientific and in the hands of trained persons. There should be close cooperation in this work with hospitals, laboratories, official health agencies, civic organizations and physicians.

Dr Zinsser, in discussing the paper of the meeting, agreed that quarantine, which had been tried off and on since Johannsen's suggestion in Denmark, was an important factor in pneumonia prevention, but he emphasized that it is only one factor, and perhaps not the most important one.

He then discussed the epidemiology of pneumonia from the point of view of the balance between resistance and infectiousness of the organisms, and made the point that the normal human being pos-

sesses a considerable resistance to pneumococcus infections, materially higher than that of most laboratory animals. Pneumonia occurs epidemiologically, as in labor camps, army cantonments, etc., only when the general resistance of the community is definitely lowered, coincident with an increase of the carrier rate and general upper respiratory diseases such as colds, bronchitis, etc. This was noticeable in army camps, where many outbreaks in individual battalions sometimes followed forced marches in wet weather, cold and wet sleeping quarters, fatigue and prolonged exposure. In several such outbreaks the types of organisms infecting different cases, even when they came from the same platoons and out of the same tents, were of different types proving that common exposure to similar conditions was the important factor, and not direct transmission from one individual to another in the sense of similar transmission in typhoid fever, etc.

The sanitary point of view toward pneumonia, therefore, should equally consider the maintenance of conditions of resistance by personal hygiene, the diminution of the general sick rate of the milder respiratory diseases, together with avoidance of exposure to a quarantine of cases, the last factor being probably the least important of the three in the prevention of spread.

Moreover, Dr Zinsser felt that in the prevention of respiratory disease the quarantine factor was more important in its bearing on preventing individuals suffering from diseases like influenza, measles, diphtheria, whooping cough, etc., from being exposed to the respiratory organisms carried by other patients or physicians and attendants, than the other way around. In influenza and measles, diseases which by themselves in the uncomplicated conditions do not kill, the death rate is due to infection of the patient during the susceptible stages with the respiratory organisms—pneumococci of various types and streptococci—from people who came in contact with them, and the patient must be protected against the doctors and attendants in this way, rather than these against the patient.

In spite of these considerations, Dr Zinsser believed that the Pittsburgh experiment was an important and interesting one, and hoped that it would be persisted in in such a manner that definite conclusions could result, since—after all, the correct point of view about matters of this kind could only be obtained by actual observation on man, rather than from theoretical considerations.

There was considerable discussion about the registering of the names of physicians to whom toxin antitoxin is furnished, and the approval of the Association was manifested in favor of such records.

Dr M. Victor Safford of the Boston Health Department called attention to the fact that while much work has been expended in research with reference to diseases of the digestive tract, comparatively little has been done in studying infections of the respiratory tract.

#### MASSACHUSETTS SOCIETY FOR SOCIAL HYGIENE

The Annual Meeting of the Massachusetts Society for Social Hygiene was held at the University Club, on Wednesday April 4 1928.

Bishop William Lawrence spoke of the past activities of the society under the presidency of Charles

W Elliot, Dr William Snow, General Director of the American Social Hygiene Association discussed the program for social hygiene throughout the country Dr George Bigelow, Massachusetts Commissioner of Public Health, Dr Cecil Drinker, President elect and Dr Helen McGillicuddy, Executive Secretary spoke of the program and plans for the Massachusetts Society

The following officers and Executive Committee were elected Dr Cecil K. Drinker President Dr George H Bigelow Hon Vice-President Mrs Maida H. Solomon Vice-President Miss Mary E Driscoll, Secretary Mr Robert M Tappan, Treasurer

Executive Committee—Dr Austin W Cheever, Dr Harold L Leland Mr Herbert C Parsons, Miss Elizabeth Ross, Dr Clarence L Scamman Dr Helen I. D McGillicuddy, Executive Secretary

#### SOUTHEASTERN MASSACHUSETTS ASSOCIATED BOARDS OF HEALTH

At the spring meeting of the Southeastern Massachusetts Associated Boards of Health at Harwich on Friday April 20, resolutions of sorrow and sincere sympathy on the death of Dr Adam S MacKnight of Attleboro were adopted at the morning session

In the afternoon, Dr A. P Goff county health officer, spoke briefly of the work of the county association Its broad objects are the better control of those diseases the means of lessening which are known, and the encouragement of better sanitation It works in coöperation with the official agencies like boards of health and the school administrations and with voluntary health societies Three diseases are well under control typhoid diphtheria and small pox. There has been no death from typhoid in the territory of the county association in three years

Discussing typhoid Dr Goff noted that one mission of the association is the elimination of surface outhouses There are a few left, the risks from them being the infection of drinking water and the spread of disease by flies At least they should be made sanitary by flyproof screens

Betterment of cesspools and safeguarding of wells are among the items in the work of the association, together with improvement of milk supplies and dairies Of late since the recent discussions at the State house on the matter, the association has supervised the permits for shellfish shipping Another line of activity lies in inspection of schools in coöperation with the school nurses

Dr Lyman A. Jones, superintendent of the Pondville Cancer Hospital outlined to the health officers the mode of obtaining admission namely, by application signed by a physician and filed at the State House

The principal subject for discussion was the very practical one of Town collection and disposal of Garbage In opening the consideration, G Webster Hallett, health officer of Barnstable noted that the problem varies with different conditions Cities have regularly developed systems but towns have made little advance

In outlining the Barnstable method Mr Hallett laid down the fundamental principle that the householder should keep the garbage in a proper receptacle and in a place convenient for collection He also spoke of four methods of disposal—use for filling which is insanitary and attracts rats burying

which may be efficient and sanitary if land in sufficient acreage is available and the burying carefully done incineration which is not economical and feeding to swine

Towns should centralize garbage and rubbish disposal on land with several years' capacity ahead, with all lighter rubbish passed through fire Mr Hallett gave details of the Barnstable "dump" which has proved excellent.

With reference to feeding to swine few towns can afford pigs and they have some disadvantages at that. Mr Hallett closed with the general admonition that health work is a legitimate overhead expense and must be cared for in the town budget Health officers should take their work seriously and lay out a well considered, definite program

Mr L S S Russell health officer of Dartmouth gave the health group something to think about in an outline of the Dartmouth plan A reliable man was found who agreed to collect garbage from the householders at the rate of seventy five cents each per month, feeding it to pigs on his own farm in the town

Mr Russell declared the plan to be practicable and satisfactory with no objectionable odors from the pigs A detail of the technique is that the pigs are fed in a concrete trough and what remains after a feeding is buried and the trough thoroughly cleansed

Mr W Fred Delano health officer of Fairhaven and president of the association stated that his town pays \$2,200 for collection of garbage to be buried Its citizens would resist individual payments for this service and there is no place where a piggery could be maintained without being a nuisance

For conclusion Mr A. M Thresher, superintendent of the New Bedford incinerator outlined the practical aspects of this method

The discussion emphasized the opening statement of Mr Hallett that the problem varies with different communities

#### CANCER WEEK AT THE TRUESDALE HOSPITAL

The following program in observance of Cancer Week was given April 27 at the Earle P Charlton Surgery of the Truesdale Hospital, Fall River

1 Dr Fenner A. Chace The rôle of the Roentgen Ray treatment in Epithelioma

2 Dr Philemon E Truesdale Malignant Disease of the buccal cavity, stomach, and colon, with demonstration of cases

3 Dr E Lester Merritt Mistakes in Urological diagnosis of malignancy

4 Dr Delano R Ryder Two cases of cancer of the buccal cavity after two and five years respectively

5 Dr Joseph A. McLaughlin X-ray diagnosis of carcinoma of stomach in contradistinction to ulcer

6 Dr William Mason Obstruction of the central artery of the retina

#### ANNUAL MEETING OF THE PLYMOUTH DISTRICT MEDICAL SOCIETY

The annual meeting of the Plymouth District Medical Society was held April 26 1928 Reports were submitted by the following named committees The Clinics and Health Associations the Cancer Clinics and the Campaign for raising money to purchase and

multiple deaths from pneumonia were investigated. Generally laboratory data were lacking, but the direct contact of a well person with one sick with pneumonia, who in turn became ill with the disease within a few days, was completely authenticated.

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May 15—South End Neighborhood Medical Club Complete notice appears on page 658

May 17—New England Heart Association For program see page 658

June 4—The Trudeau Society Detailed notice appears on page 658

June 7—Boston Dispensary Complete notice on page 658

June 18 20—Meeting of the American Association for the Study of Gout See page 425 issue of April 12 for complete notice

June 18 22—Convention of the Catholic Hospital Association. Complete notice appears on page 1597 issue of February 16

## BOOK REVIEWS

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This book is the first American book on this subject since the one by Jackson and McMurtry in 1912 It should prove a valuable addition to dermatological literature

The first part, 62 pages discusses quite thoroughly anatomy and physiology of the scalp and hair, together with numerous general considerations about these areas The author has accumulated many stray facts about hair and discusses numerous legends regarding hair

Part II emphasizes the altogether too much neglected hygiene of the scalp and discusses cosmetics very well Included in this discussion is a model legislative act on regulation of beauty culture as well as the New York City ordinances on the same subject This takes up about one-third of the book

More than half of the remainder is devoted to a discussion of various diseases of the scalp and hair alphabetically arranged Both the usual and unusual manifestations of disease are discussed It seems curious that hardly any mention of the use of x ray in ringworm for example is made here

In Part IV treatment is taken up in considerable detail one chapter being devoted entirely to the use of x ray and apparently taken very largely from MacKees book There is an appendix containing numerous prescriptions

On the whole the book can be widely used with benefit by the general practitioner and student

*Annals of the Pickett Thomson Research Laboratory* Volume III Williams & Wilkins, Baltimore, 1927 Pp 316

This volume is an elaborate study of the streptococci giving a thorough histological review of the work done on this group of organisms and a useful summary of the characteristics of each known member of the streptococcus group A very complete bibliography is appended and there are a considerable number of strikingly handsome plates illustrating the morphology of the organisms under the microscope, and the gross appearance of the colonies on various media There are five colored plates illustrating the colonies and the surrounding zones of hemolysis as seen on Crowe's medium

*Aluminum Compounds in Food* By ERNEST E SMITH PH D M D Paul B Hoeber, Inc New York City, 1928 pp 361

The book contains the results of studies relating to the presence and effects of compounds of aluminum in food form the scientific literature the researches on this subject by the author, and the digest of the referee board of scientific experts report on the influence of aluminum compounds on the nutrition and health of man Some of the phases of this subject discussed are the national occurrence of aluminum and the added compounds of this metal in food the litigations relative to baking powders containing salts of aluminum, and the action in the alimentary tract of food prepared with S D S baking powder etc The board of experts, comprising Drs Ira Remson R H Chittenden J H Long, A E Taylor and Theobald Smith find that aluminum compounds added to food in small quantities are not injurious to health but in moderate quantities (up to 200 mgs daily) may provoke mild catharsis And large quantities of aluminum in baking powder may produce an occasional attack of colic

*Nerve Tracts of the Brain and Cord* By WILLIAM KEILLER, F.R.C.S Ed Professor of Anatomy and Applied Anatomy University of Texas New York, The Macmillan Company, 1927 pp 432

This volume is a text book on the anatomy of the brain and cord written for medical students The subject is handled in a rather unusual manner, and the book is evidently designed to serve as text book in courses given by the author It should fill this purpose admirably

It is evident throughout that the author desires his students to think of neurological anatomy, not as a meaningless jumble of Latin names but as a system of definite anatomical structures having definite and important functions the knowledge of which is as much a part of knowledge of anatomy as the names of the structures themselves

Part I pertains to the laboratory study of nerve anatomy and may be used as a manual for such study Part II is descriptive and presents a good word picture of the anatomy and physiology of the central nervous system Part III is devoted to applied neurology and here again the method is unusual Anatomy, physiology and pathology are brought together in a very interesting manner If the author's scheme of teaching is used it should prove a valuable and instructive text book for the course

equip a Home for the Massachusetts Medical Society. The following officers were elected: President, Dr Thomas H McCarthy of Brockton, Vice-president, Dr Frederick W Murdock of Brockton, Secretary-Treasurer, Dr Loring B Packard, Brockton. Dr David Bridgwood read a paper under the title of 'Glaucoma' which was scientific in its scope and profusely illustrated by lantern slides.

Addresses were delivered by the retiring President, Dr Shaw, and the incoming President, Dr McCarthy. Recognition of the work of Dr Shaw was shown by a vote of thanks.

#### WACHUSETT MEDICAL IMPROVEMENT SOCIETY

The Wachusett Medical Improvement Society met at the Holden Hospital, May 2, 1928.

Dr James J Goodwin 202 Church Street, Clinton, Mass., presented a paper on fractures.

Dr Gilman Leeds Chase, 185 Chestnut Street, Clinton, Mass., read a paper on appendicitis.

Dr Everett H Tomb, also of Clinton, Mass., gave a talk on anesthesia.

#### ANNUAL CONVENTION OF THE MASSACHUSETTS DENTAL SOCIETY

The 64th Annual Convention of the Massachusetts Dental Society opened its four day session at the Hotel Statler, Monday, May 7. It is reported that the total registration figure was in excess of four thousand dentists from all parts of the country but principally from Massachusetts.

The result of the election of officers follows:

President-elect Dr Charles W Hammett of Taunton automatically became president, Vice-president Dr Thomas K. Ross of Fitchburg was elected president-elect, and Dr Frank A Delebarre of Boston was chosen vice-president. The following were re-elected: Secretary Dr William H Gilpatrick, assistant secretary Dr Robert S Catheron, treasurer, Dr Joseph T Paul, and editor, Dr H Melville Quimby, all of whom are from Boston.

There was on display at the Hotel coincident with the convention, an unusually large exhibition of dental paraphernalia. Eighty companies were represented. The exhibits included tools, furniture, sanitary apparatus and X-ray machines.

Dr Richard H Norton delivered the annual address. Dr Leroy M S Miner, dean of the Harvard Dental School, spoke on 'A General Consideration of the Problem of Vincent's Infection'.

#### NORFOLK SOUTH DISTRICT MEDICAL SOCIETY

At the meeting of the Norfolk South District Medical Society held May 3 the following officers were elected:

President Daniel A Bruce  
Vice-President George M Sheahan  
Secretary, Treasurer, Librarian Nahum R Pillsbury  
Councillors Cornelius A. Sullivan (nominating), Nahum R Pillsbury (alternate), Thomas B Alexander, Charles S Adams, William G Curtis  
Censors Cornelius A. Sullivan, Supervisor, Daniel B Reardon, Fred A. Bartlett, Lewis W Pease, John C Fraser  
Commissioner of Trials Nathaniel B Hunting

#### ESSEX SOUTH DISTRICT MEDICAL SOCIETY

This Society held a special meeting and dinner at the Hawthorne Hotel, Salem on Wednesday evening, April 25, 1928, in honor of Dr Francis Carter Wood, First Vice-President of the American Society for the Control of Cancer, and Director of the Research Laboratory for Cancer of Columbia University.

This rare opportunity to hear Dr Wood was thoroughly appreciated by the members of the Society.  
WM T HOPKINS Reporter

#### SOUTH END NEIGHBORHOOD MEDICAL CLUB

The next meeting of the South End Neighborhood Medical Club will be held at the office of the Boston Tuberculosis Association, 554 Columbus Avenue, Boston on Tuesday, May 15, 1928, at 12 noon.

John B Hawes 2d, M.D., 11 Marlborough Street, Boston, will speak on the 'Early Diagnosis of Tuberculosis'. All physicians are cordially invited.

The usual luncheon will follow.

#### THE TRUDEAU SOCIETY

The next meeting of the Trudeau Society of Boston will be held on Monday evening, June 4, 1928 at 8 15 P.M., in John Ware Hall, Boston Medical Library, 8 The Fenway, Boston.

The speaker will be Dr Everts A. Graham of St. Louis, subject "Remarks on Pulmonary Suppuration".

Physicians, medical students and nurses are cordially invited to attend this meeting.

RANDALL CLIFFORD Secretary

#### BOSTON DISPENSARY

The June meeting of the Clinical Staff of the Boston Dispensary will be held at 25 Bennet Street on Thursday evening, June 7th at 8 00 o'clock.

The following papers will be presented by members of the Division of Research:

1 "A Study of Bleeding and Clotting Time Before and After Tonsillectomy" H J Inglis M.D.

2 'The Diagnostic Value of Sugar Tests in Diabetes' A Preliminary Report. James H Townsend, M.D.

3 "The Diagnosis of Unilateral Diseases of the Kidney by Functional Tests" Harold T Chamberlin M.D., Joseph H Pratt, M.D.

4 "A Comparison of the Diagnostic Value of Functional Tests of the Kidney" Louis H Kramer, M.D., David Davis, M.D.

All physicians are cordially invited to attend.

MAYNARD LADD M.D., President

JOSEPH J SKIRBALL M.D. Secretary

#### NEW ENGLAND HEART ASSOCIATION

A meeting arranged by the Hospital Committee. Dr B E Hamilton, chairman is scheduled for May 17 at 4 45 P.M. at the Robert B Brigham Hospital, Boston.

#### PROGRAM

- 1 Dr Louis M Spear Experience with Chronic Cardiac Patients at the Robert B Brigham Hospital
- 2 Mr Howard Raymond, Industrial Aid Society

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This volume is an elaborate study of the streptococci giving a thorough histological review of the work done on this group of organisms and a useful summary of the characteristics of each known member of the streptococcus group. A very complete bibliography is appended and there are a considerable number of strikingly handsome plates illustrating the morphology of the organisms under the microscope and the gross appearance of the colonies on various media. There are five colored plates illustrating the colonies and the surrounding zones of hemolysis as seen on Crowe's medium.

*Aluminum Compounds in Food* By ERNEST E SMITH PHD MD Paul B Hoeber, Inc., New York City 1928 pp 361

The book contains the results of studies relating to the presence and effects of compounds of aluminum in food form. The scientific literature the researches on this subject by the author and the digest of the referee board of scientific experts report on the influence of aluminum compounds on the nutrition and health of man. Some of the phases of this subject discussed are the national occurrence of aluminum and the added compounds of this metal in food. The litigations relative to baking powders containing salts of aluminum and the action in the alimentary tract of food prepared with S D S baking powder etc. The board of experts comprising Drs Ira Remson R H Chittenden, J H Long A E Taylor and Theobald Smith find that aluminum compounds added to food in small quantities are not injurious to health, but in moderate quantities (up to 200 mgs daily) may provoke mild catharsis. And large quantities of aluminum in baking powder may produce an occasional attack of colic.

*Nerve Tracts of the Brain and Cord* By WILLIAM KEILLER, F.R.C.S., Ed Professor of Anatomy and Applied Anatomy University of Texas New York, The Macmillan Company 1927 pp 432

This volume is a text book on the anatomy of the brain and cord written for medical students. The subject is handled in a rather unusual manner, and the book is evidently designed to serve as text book in courses given by the author. It should fill this purpose admirably.

It is evident throughout that the author desires his students to think of neurological anatomy not as a meaningless jumble of Latin names but as a system of definite anatomical structures having definite and important functions. The knowledge of which is as much a part of knowledge of anatomy as the names of the structures themselves.

Part I pertains to the laboratory study of nerve anatomy and may be used as a manual for such study. Part II is descriptive and presents a good word picture of the anatomy and physiology of the central nervous system. Part III is devoted to applied neurology and here again the method is unusual. Anatomy physiology and pathology are brought together in a very interesting manner. If the author's scheme of teaching is used it should prove a valuable and instructive text book for the course.



equip a Home for the Massachusetts Medical Society

The following officers were elected President, Dr Thomas H McCarthy of Brockton, Vice-president, Dr Frederick W Murdock of Brockton Secretary Treasurer, Dr Loring B Packard, Brockton

Dr David Bridgwood read a paper under the title of 'Glaucoma' which was scientific in its scope and profusely illustrated by lantern slides

Addresses were delivered by the retiring President Dr Shaw, and the incoming President, Dr McCarthy Recognition of the work of Dr Shaw was shown by a vote of thanks

#### WACHUSETT MEDICAL IMPROVEMENT SOCIETY

The Wachusett Medical Improvement Society met at the Holden Hospital, May 2, 1928

Dr James J Goodwin 202 Church Street, Clinton, Mass., presented a paper on fractures

Dr Gilman Leeds Chase, 185 Chestnut Street Clinton, Mass., read a paper on appendicitis

Dr Everett H Tomb, also of Clinton, Mass., gave a talk on anesthesia

#### ANNUAL CONVENTION OF THE MASSACHUSETTS DENTAL SOCIETY

The 64th Annual Convention of the Massachusetts Dental Society opened its four day session at the Hotel Statler Monday, May 7 It is reported that the total registration figure was in excess of four thousand dentists from all parts of the country but principally from Massachusetts

The result of the election of officers follows

President-elect Dr Charles W Hammett of Taunton automatically became president, Vice president Dr Thomas K. Ross of Fitchburg was elected president-elect, and Dr Frank A Delebarre of Boston was chosen vice-president. The following were re-elected Secretary, Dr William H Gilpatrick, assistant secretary Dr Robert S Catheron treasurer, Dr Joseph T Paul and editor, Dr H Melville Quimby, all of whom are from Boston

There was on display at the Hotel coincident with the convention an unusually large exhibition of dental paraphernalia Eighty companies were represented The exhibits included tools furniture, sanitary apparatus and X ray machines

Dr Richard H Norton delivered the annual address Dr Leroy M S Miner, dean of the Harvard Dental School spoke on A General Consideration of the Problem of Vincent's Infection

#### NORFOLK SOUTH DISTRICT MEDICAL SOCIETY

At the meeting of the Norfolk South District Medical Society held May 3 the following officers were elected

President Daniel A Bruce

Vice-President George M Sheahan

Secretary, Treasurer Librarian Nahum R Pillsbury

Councillors Cornelius A Sullivan (nominating), Nahum R Pillsbury (alternate), Thomas B Alexander Charles S Adams, William G Curtis

Censors Cornelius A Sullivan, Supervisor Daniel B Reardon, Fred A Bartlett, Lewis W Pease, John C Fraser

Commissioner of Trials Nathaniel B Hunting

#### ESSEX SOUTH DISTRICT MEDICAL SOCIETY

This Society held a special meeting and dinner at the Hawthorne Hotel, Salem, on Wednesday evening, April 25, 1928, in honor of Dr Francis Carter Wood, First Vice-President of the American Society for the Control of Cancer, and Director of the Research Laboratory for Cancer of Columbia University

This rare opportunity to hear Dr Wood was thoroughly appreciated by the members of the Society  
Wm T Hopkins Reporter

#### SOUTH END NEIGHBORHOOD MEDICAL CLUB

The next meeting of the South End Neighborhood Medical Club will be held at the office of the Boston Tuberculosis Association, 554 Columbus Avenue Boston, on Tuesday May 15, 1928, at 12 noon

John B Hawes 2d MD, 11 Marlborough Street Boston, will speak on the 'Early Diagnosis of Tuberculosis All physicians are cordially invited

The usual luncheon will follow

#### THE TRUDEAU SOCIETY

The next meeting of the Trudeau Society of Boston will be held on Monday evening June 4, 1928, at 8 15 P M, in John Ware Hall, Boston Medical Library, 8 The Fenway, Boston

The speaker will be Dr Evarts A Graham of St Louis subject Remarks on Pulmonary Suppuration

Physicians, medical students and nurses are cordially invited to attend this meeting

RANDALL CLIFFORD, Secretary

#### BOSTON DISPENSARY

The June meeting of the Clinical Staff of the Boston Dispensary will be held at 25 Bennet Street on Thursday evening, June 7th, at 8 00 o'clock

The following papers will be presented by members of the Division of Research

1 'A Study of Bleeding and Clotting Time Before and After Tonsillectomy H J Inglis, MD

2 'The Diagnostic Value of Sugar Tests in Diabetes A Preliminary Report. James H Townsend, MD

3 'The Diagnosis of Unilateral Diseases of the Kidney by Functional Tests' Harold T Chamberlin, MD Joseph H Pratt, MD

4 A Comparison of the Diagnostic Value of Functional Tests of the Kidney' Louis H Kramer, MD David Davis, MD

All physicians are cordially invited to attend

MAYNARD LADD MD, President

JOSEPH J SARRALL, MD Secretary

#### NEW ENGLAND HEART ASSOCIATION

A meeting arranged by the Hospital Committee, Dr B E Hamilton, chairman is scheduled for May 17 at 4 45 P M at the Robert B Brigham Hospital Boston

#### PROGRAM

- 1 Dr Louis M Spear Experience with Chronic Cardiac Patients at the Robert B Brigham Hospital
- 2 Mr Howard Raymond Industrial Aid Society

# The New England Journal of Medicine

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## NEW ENGLAND SURGICAL SOCIETY

### CONSERVATISM IN RENAL SURGERY

BY J. DELLINGER BARNEY, M.D., F.A.C.S.\*

I have chosen the subject of conservatism in renal surgery for the reason that I have had occasion to see a good deal of renal surgery in which the sometimes more difficult path of conservatism was not followed. In many a case it is easier to operate than to use cool judgment and give supportive treatment, in other instances it is easier to do a nephrectomy than to save what may well be a useful kidney. In other words there can be conservatism without surgery as well as with it.

The experience of years has taught us that one reasonably healthy kidney is sufficient to support an individual in health and comfort for the length of his natural life. In fact Tuffier showed over 30 years ago that life could be supported by a very small amount of normal renal tissue. We should not, however, take advantage of these observations by removing kidney tissue which may reasonably be conserved. At the same time one must not fall into the error of trying to save, or in fact saving, a kidney which is so pathological that its preservation will be a menace rather than a benefit to the patient. We find ourselves, therefore, in the position of trying to answer the question of when to do and when not to do a nephrectomy. In certain conditions one can be dogmatic as to the proper procedure, in other instances every feature of the case must be carefully considered and under these conditions a judgment born of experience is the main reliance.

We all know now that only the most radical measures, that is to say, nephrectomy, can be adopted in tuberculosis or neoplasm of the kidney. The same is true of pyonephrosis of long standing, whether it be due to calculus, aberrant renal vessels or unknown cause. In certain cases of traumatic rupture the prompt or ultimate removal of the kidney is a life-saving measure. Many of the congenital malformations and malpositions of the kidney, if once they become the seat of pathological changes are better removed than temporized with for it must be remembered in all cases of renal surgery that a second operation on a kidney may be a matter of extreme difficulty with a corresponding increase in mortality. On these points I think we can all agree.

Let me now turn to those conditions in which conservatism with or without surgery may often be exercised. While not so many years ago the so-called "floating kidney" was regarded as legitimately operable, chiefly because it had the misfortune to "float", such a kidney is now not operated upon by the urologist unless it is proved to be the seat of pain, hydronephrosis or infection. Thanks to our orthopedic colleagues and to the corsetière, both of whom can often relieve the generalized enteroptosis, these kidneys are now largely unmolested. Also it will be recalled that prompt operation, in fact usually a nephrectomy, was thought to be necessary in the cases of "hematogenous kidney", today we know that many patients with this condition can safely be watched and given supportive treatment, or if operation must be done, this can often consist merely of decapsulation with the drainage of multiple cortical abscesses.

Two or three of such cases coming under my observation will illustrate the possibilities of conservative treatment. One was a robust man of 33 who was seen in 1922. He was seized with severe pain of sudden onset in the right loin. This was accompanied by a high septic fever, chills, leucocytosis of 28000, with an enlarged right kidney and marked tenderness. He shortly became a very sick man. Cystoscopic and x-ray examination helped to confirm my diagnosis of acute hematogenous infection of the right kidney. *Staphylococcus aureus* was found in the kidney urine. An x-ray of the teeth showed a large abscess cavity at the root of the first lower molar on the right. This tooth was subsequently extracted and *staphylococcus aureus* was found in the pus surrounding it. After a week or ten days of anxious watching on my part, meantime ice bags, hypodermoclysis and a certain amount of morphine being used, the symptoms gradually disappeared, temperature fell to normal and the patient left the hospital entirely recovered. I have seen the patient within a year and found no residual symptoms whatever, his urine is normal and he has been accepted for life insurance.

Another case was that of an old lady of 81 who was seen 6 years ago. In this patient there was an involvement first of the right, then of the left kidney. *Staphylococcus aureus* was recovered.

\*For record and address of author see "This Week's Issue" page "90"

The illustrations are numerous and are largely grouped at the end of the book. To my mind this is a poor arrangement. Illustrations should be scattered through the text which they illustrate. They are mostly pen drawings and, while not as decorative as the more formal type of illustration, they are, in the main, clear and forceful.

I believe that this book has a definite place. It presents neuroanatomy in an unusual way, and yet in a way which makes the study of this most difficult subject more attractive. Because of this unusual presentation it is not as satisfactory for a reference book as some of the more conventional neuroanatomies.

*Elements of Physiology* By ERNEST G. MARTIN, Professor of Physiology in Stanford University, California, and FRANK W. WEYMOUTH, Associate Professor of Physiology at the same place. Philadelphia, Lea and Febiger, 1928. Pp. 184.

This is a book of marked distinction. In the first place the attempt has been made to present a body of knowledge sufficient for the needs of medical and other advanced students within the compass of a volume about a third smaller than the three standard texts with which it is natural to compare it. This involves the exclusion of much material and the decision as to what should be left out must have constituted a heavy task for the authors. It has been faced with much wisdom. In spite of condensation the book gives an impression of completeness and good proportion.

In its plan it departs from the traditional arrangement. First, there is a concise and up-to-date discussion of protoplasm with the requisite exposition of colloids, ions and electric charges. Next we have the biology of the cell and then the differentiation of the tissues. The topics of cell environment and interaction follow. Attention is now directed to the highly organized systems and the means of their maintenance,—circulation, respiration and digestion. Finally there is an ample treatment of the reaction of the body to its surroundings, the physiology of receptors and effectors. Here is Doctor Weymouth's chief contribution, an unhackneyed account of the sense-organs abounding in facts which it would be difficult to find elsewhere.

This quality of freshness in subject matter characterizes the work of both the authors. The style of each is lucid and sprightly. Numerous cross references are furnished which will help the student to correlate the contents of the different chapters. A bibliography is supplied which is the more valuable for being limited to a relatively small number of sources. The reader profits by the mature judgment of the writers and finds that only those articles which have uncommon interest and reliability are recommended.

*Gynaecology* By HOWARD A. KELLY AND COLLABORATORS

This is a text book consisting of a collection of monographs by Kelly and other recognized authorities in the specialty of gynaecology, many of whom are present and former students and associates of his.

In the preface Kelly speaks of the fact that it is rare for one man to write two books on the same subject at an interval of a generation. He then enumerates the astonishing advances that have been made in the last twenty years in gonorrhoea, sterility,

endometrial growths, cancer, endocrinology, radium treatment, and many other subjects. The preface, which is well worth reading as a resume of those who have contributed to the advance of gynaecology, ends as follows: 'My pleasant task is done, the shadows fall well aslant my page, it is almost time to draw the curtains and turn on the Great Light. To boon companions and fellow travellers all—Vale.' This is beautifully expressed, but we feel that all who know him or who have been fascinated by the characteristic manner in which he calls on his vast experience to illustrate his points as he writes will hope that Howard A. Kelly will be spared for many more years of useful labor.

As a whole we do not think that the book is as well co-ordinated and arranged as it would be if it had been written by a single author. We believe that it is easier to look up any one subject if a book be divided according to diseases rather than organs, so far as possible, and if matters of operative technique with descriptions of operations be grouped in one section. That is difficult to arrange, however, in a collection of monographs where each individual author has to put his whole contribution into one chapter. We think that the specialist or practitioner who has had practical experience will be able to get more out of the book than the undergraduate student because of the disconnected arrangement.

The contents of the various monographs is excellent. The anatomy and histology is clearly expressed and easily understood. More should have been said about the male factor in sterility. In regard to leucorrhoea in children, Kelly says that the etiology is almost without exception gonorrhoeal. We do not believe that this is generally accepted now, but that a large percentage are due to simple infections resulting from uncleanness. The chapter on the fascia, and ligaments of the pelvis floor, by Farrar, is good.

Ward's chapters give a complete discussion of the treatment of cystocele and prolapse and of his operative methods, which are excellent. We believe, however, that the subject would have been better and more fully treated if he had described some of the simpler operations also. The illustrations accompanying his article are exceptionally clear.

Other good articles are those on fibroids, extra uterine pregnancy, cancer and menstruation and its abnormalities. The last is such a large subject that it has not been covered as fully as we wish it might have been, but one can look up the other articles by Novak and obtain complete information. We think that it would have been better to have combined the chapter on adenomyomata and endometriomata in one, as they have many points in common. Interesting articles on protein therapy, radium, x-ray, pneumoperitoneum, electrothermy and psychopathology end the book.

The illustrating is well done, as it always is in any book of Kelly's. Not all of them are by Brodel and Becker for each collaborator has had his own artist, but they are, with hardly an exception, excellent. The same may be said of the photomicrographs.

On the whole, the book is a real contribution, because it contains all the latest developments in gynaecology and the personal experience of the leaders in the field. We wonder if the next twenty years can possibly show as great an advance as the last, but that is what Kelly wondered when he wrote his first book.

the calculi to be undertaken. After operation she gradually improved although the temperature persisted. Two weeks later a second operation was done and the stones removed. Inspec-

in cases of multiple cortical abscesses of the kidney.

The presence of aberrant renal blood vessels, especially those involving the lower pole of the

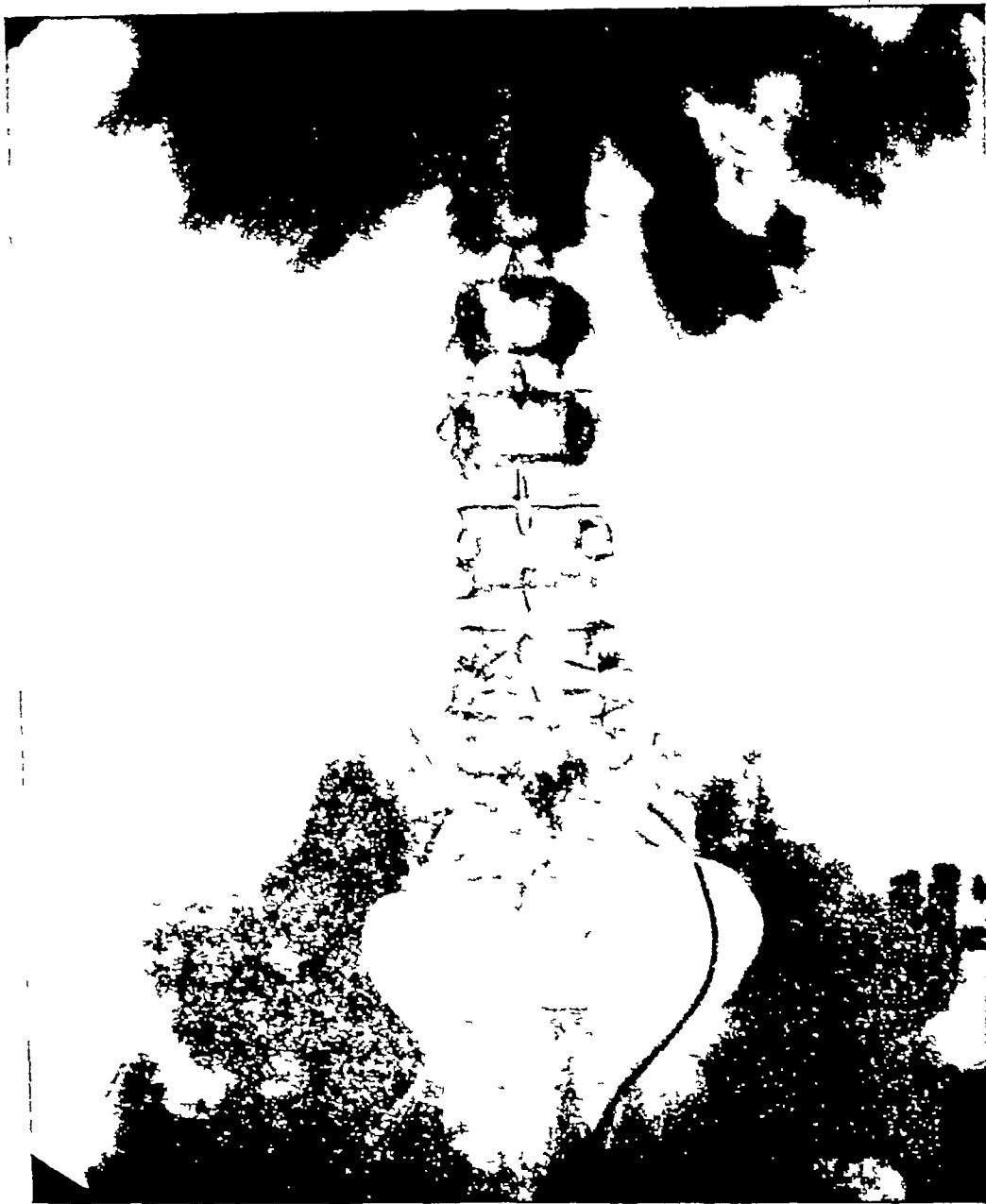


FIGURE II. Same case five months after operation at which time the aberrant vessel was cut and the kidney suspended into a more normal position. Note that the pelvis is much smaller in size and that the calices have recovered their normal cupping. The ureter is partially filled but does not show in the plate.

tion of the kidney at this time showed it to be normal in size, color and consistency with no evidence of cortical abscesses. The stones were removed by a pyelotomy incision. The patient made an excellent recovery. This case demonstrates clearly the value of simple decapsulation

kidney has been recognized for years by the anatomist and to a lesser extent by the surgeon. But it has remained for the urologist to attach to them the clinical importance to which they are entitled. And while the urologist formerly cut these vessels sometimes with disastrous re-

ered from both urines Under supportive treatment she eventually became entirely well and is still alive This case illustrates the fact that if nephrectomy is done at the outset one may be the right upper ureter Although the patient was obviously sick it seemed wise to try to induce the smaller stone to pass by cystoscopic manipulation A few days after entering the hospital

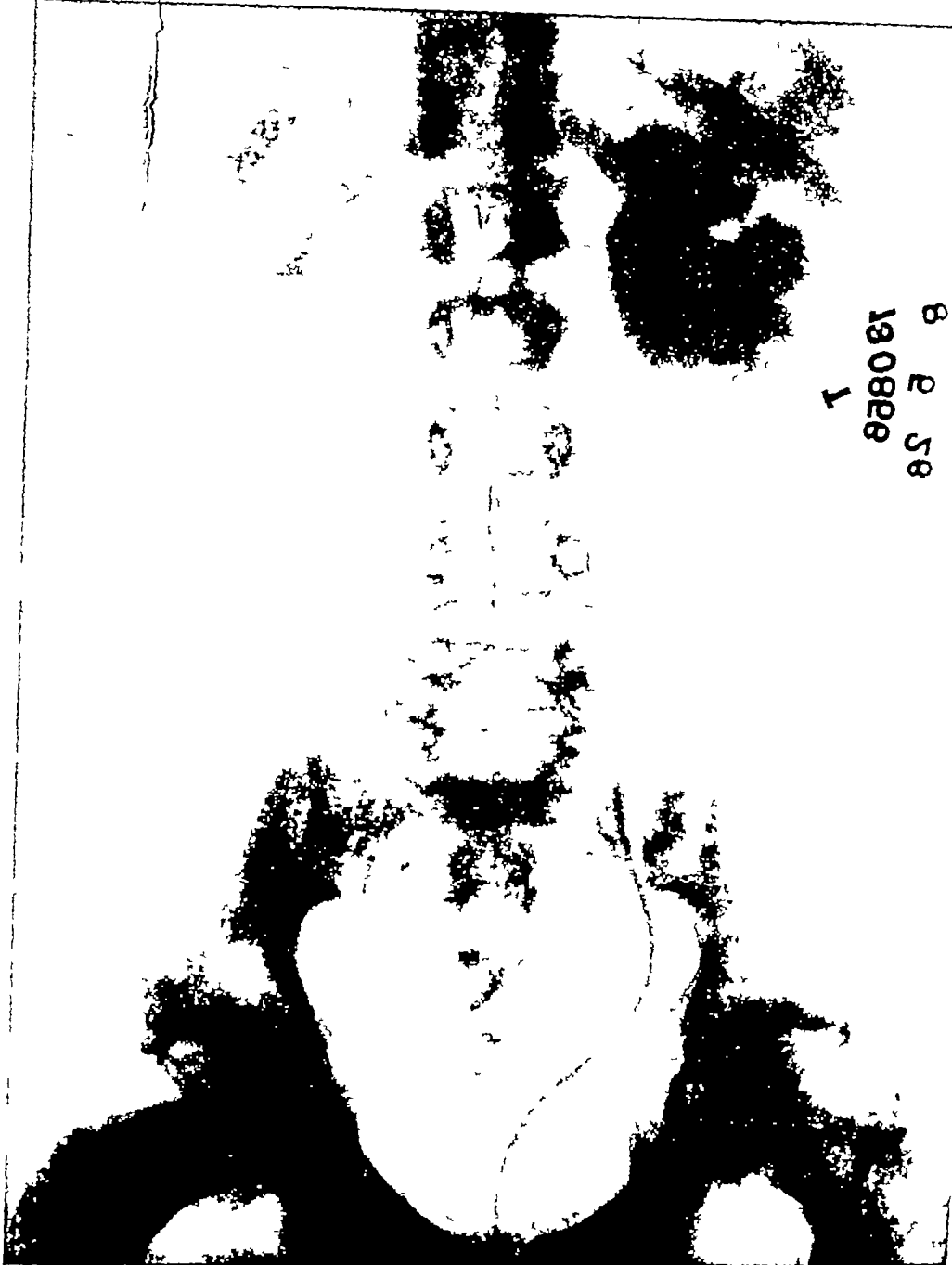


FIGURE 1 Showing marked hydronephrosis due to an aberrant blood vessel The ureter is not filled although the catheter has been drawn down

faced with the same necessity on the other kidney her condition became serious and operation was done On exposing the kidney it was found to be red, tense and swollen with multiple abscesses

A third case, more recently seen, was that of a young girl of 19 Examination showed a stone showing through its capsule Decapsulation was done but the girl was too sick to allow search for

much dilated kidney pelvis with clubbed calices and a failure of the pyelographic medium to flow down the ureter (Figure I). In fact the catheter could not be passed beyond the uretero-pelvic junction. A diagnosis of hydronephrosis, due to aberrant vessels was made and confirmed at operation. The kidney was not adherent and was normal in size and color. At the uretero-pelvic junction there was a small artery which was stretched tightly across from the lower pole of the kidney. This vessel was ligated and divided. Immediately on cutting this vessel the ureter below the pelvis was seen to fill up with urine and a small portion of the lower pole of the kidney became discolored. The kidney was then decapsulated and sutured in as high and favorable a position as possible. Recovery was uneventful. The boy has been examined within the last week. He has been absolutely comfortable in every respect and his urine is entirely normal. Cystoscopy showed an entirely normal function of the left kidney. A pyelogram (Figure II) showed a considerably dilated pelvis, but much less than before operation, with a return to a normal contour and cupping of the calices. I believe from an experience with other cases that after the elapse of several months more we shall find the kidney pelvis to be of normal size.

Another case where even more conservatism was exercised and which has resulted as favorably was operated upon by me about five years ago. This occurred in a woman of 30. Pyelogram showed a bilateral hydronephrosis of marked extent. There were a few leucocytes and colon bacilli in each urine. Phthalein excretion was much delayed on both sides and only about 5% was secreted in 15 minutes. At operation on the right side (which was the worst of the two) a large aberrant artery with two accompanying veins was found to be crossing the ureter at its junction with the pelvis. As it seemed unwise to cut these vessels the kidney was decapsulated and sutured in such a position that the aberrant vessels no longer impinged on the ureter. The patient has been entirely free from pain on the right side. Unfortunately for science she refuses further study of the kidney.

While a kidney which is the seat of much pain and tenderness, which gives rise to a persistent high temperature and which on cystoscopic study is found to be practically completely obstructed by a stone at the uretero-pelvic junction, must generally be removed, this is not always the case. Last April I saw a little girl of 6 years with this condition. At operation the kidney was found to be considerably enlarged, soft, fluctuant and its cortex much thinned. On opening the pelvis about 4 ounces of thick yellow pus escaped. Following this a stone, impacted in the uretero-pelvic junction was removed (Figure III). Further examination of the kidney showed considerable cortical tissue. In view of this and in view of the fact that chil-

dren not only recover amazingly well from serious organic damage but that they, normally speaking, have a long life to live I decided not to remove this child's kidney. The kidney was drained for some time by a tube passing through the cortex and out of the pelvis and three weeks later after a smooth convalescence the child was discharged well. On September 6, 1927, 5 months after operation she was seen in the out-patient department. She had gained much weight there was no pain or tenderness whatever and the urine contained only 2 or 3 leucocytes per high power field.

Another patient, a woman of 42, came to the hospital last August. She had had pain in the left kidney region for 19 years. This was mostly associated with pregnancies, of which there have been 7. Abdominal examination showed a large, tender left kidney. The urine was loaded with pus. X-ray showed a large stone in the ureter just below the kidney. A ureter catheter would not pass this stone and no urine could be obtained from the kidney. At operation there was inflammatory tissue about the ureter. It was opened and the stone removed. Much thick yellow pus was evacuated from the kidney. Nephrectomy seemed to be definitely indicated but as the patient's condition did not seem to warrant further procedure it was decided to give her the chance of recovering her kidney function. She made an excellent recovery and at the time of leaving the hospital her urine contained but 15-20 leucocytes per field.

Certain patients with pyonephrosis are desperately ill. Nephrectomy is definitely indicated, but just as definitely would be fatal. Something must be done to alleviate the gravity of the situation. In these cases a preliminary nephrostomy can be done under local novocain anesthesia. It is most gratifying to see the ease and speed with which recovery takes place after the pus has been evacuated and the kidney thoroughly drained. This procedure combined with copious administration of liquids and salt solution by hypodermoclysis enables one to proceed with the nephrectomy at a time when it can be borne safely.

A patient answering to this description was seen last January. He was a man of 27 with an enormous pyonephrosis on the left side. Cystoscopy and pyelogram showed a completely destroyed kidney. The patient was far too sick to stand nephrectomy. After some days of expectant treatment it was decided to do nephrostomy with local novocain anesthesia. This was done with the evacuation of 72 ounces of foul pus from the kidney. The patient experienced no discomfort during the operation and made steady and rapid improvement afterward. Nineteen days after the nephrostomy a nephrectomy was done under ethylene gas anesthesia. He recovered well and left the hospital 23 days after nephrectomy.

sults to that portion of the kidney with which they were associated, he now finds that in many instances he can relieve the obstruction at the uretero-pelvic junction by simple decapsulation with suture of the kidney into a new and more

time when the patient has hardly recovered from the first operation. Also it is a fact that aberrant renal blood vessels are frequently bilateral and that the second kidney may require operation as well. It, therefore, seems reasonable to



FIGURE III Showing a stone impacted in the ureter just outside of the kidney with the catheter stopping it at this point and the ureter distended with sodium iodide below it. No fluid could be injected past the stone.

favorable position. It is advocated by some, but I believe unwisely, that the ureter be reimplanted in the renal pelvis in such a position that obstruction of its lumen is done away with. While this latter procedure will undoubtedly succeed in certain instances it should be remembered that failure generally means nephrectomy and at a

avoid the danger of jeopardizing either kidney. A case illustrating the possibilities of conservatism was seen at the hospital last April in a young man of 18. He had had intermittent attacks of severe pain in the left loin for 2 years. Physical examination was negative including the urine from his left kidney. Pyelogram showed a

cyst of the lower pole the size of a croquet ball was found. Its walls were trimmed off close to their junction with the kidney revealing a depression of enormous size in the substance of the kidney. An attempt was made to dissect the remaining cyst wall from the cavity but this was abandoned when it was found that the tissue was strongly adherent to the large vessels of the kidney where they met at the hilum. As the kidney tissue which remained was apparently perfectly sound it was decided not to remove the organ although this seemed the obvious procedure and it would have been perfectly simple to do it. The cavity was swabbed out with Zenker's fluid after the manner of treating brain cysts in the belief that it would destroy the lining cells of the remaining cyst wall and prevent regeneration. So far as I know this is a procedure which has not been used before in kidney surgery. The patient's recovery was delayed somewhat by a profuse and persistent discharge of serum and pus from the wound but this eventually healed and the patient is now entirely well.

Traumatic rupture of the kidney is a condition which may call for immediate nephrectomy. Before proceeding with such an operation it is important to determine whether the injured kidney is the only one the patient possesses. That such a rare coincidence is not impossible is illustrated by a case occurring in a Boston hospital some years ago where a badly torn but solitary kidney was successfully removed. This was in the days when a cystoscope was rarely used. No definite rule can be laid down as to when or whether to operate on a ruptured kidney. I have seen many such cases, some in considerable shock, with marked hematuria, pallor, rapid pulse, fullness in the side, spasm and tenderness, where the first impulse was to go in at once and remove the kidney. But it is always surprising how many of these cases can be kept under careful observation, and found to turn the corner to safety. The best guide is probably found in the rate and quality of the pulse and in the blood pressure. So long as changes for the better occur in these directions one can afford to wait in the belief that another hour or two will bring about still further improvement. In certain cases hematuria will continue steadily, but only to a moderate degree for days and even weeks, in others it will cease after a day or two only to recur repeatedly over a long period. That kidney tissue can handle a considerable amount of damage either from laceration or incision is obvious not only from our experience with the traumatic cases but also with the cases of nephrotomy for stone. On the whole one will find but few records of nephrectomy for ruptured kidney either among his own files or in those of a large hospital.

In connection with this type of case one cannot help mentioning the now considerable num-

ber of cases in which partial resection of the kidney has been performed by various surgeons for various conditions. Portions of the kidney have been successfully removed for trauma, stone, new growth and other conditions. The isthmus of dense renal tissue joining the lower poles of a horse-shoe kidney has been divided several times. The kidney, therefore, seems to lend itself on the whole very well to cutting or tearing procedures, an experience which is necessarily surprising in view of its very profuse blood supply and of the impossibility of doing a really accurate suture of its raw surfaces.

The kidney is often the seat of serious pathology during pregnancy. But how rarely on the one hand is interruption of the pregnancy demanded on this account and how infrequently any intervention other than perhaps renal lavage is necessary. On the other hand it is equally remarkable how quickly an apparently seriously affected kidney recovers itself after the termination of pregnancy.

I shall not attempt to exhaust all possible considerations of the conditions in which a conservative attitude toward the kidney can be adopted. What I have tried to do has been to discuss the more common conditions which are met with and to show how even under a considerable handicap of pathology the kidney can recuperate to a remarkable extent.

The cases which I have cited are not unusual or unique. No claim is made that a similar policy could be adopted in another case which might seem to be almost identical. Every case offers its own problem. The decision as to whether one will pursue a constructive or a destructive course rests entirely with the surgeon. This decision is by no means easily arrived at but can be made more easily by the experienced than by the inexperienced. I think, however, that we all have much to learn as to the possibilities of restoring a damaged kidney to a useful organ.

Much experimental work and long-continued clinical observation have shown beyond question that the kidney can withstand not only obstruction, especially of the intermittent type, for a long period of time, but also that it can resist infection to a surprising degree. I think it is fair to say that we do not yet know the limits to which a kidney can be damaged and to what extent it can make at least a fair recovery. Much more postoperative study of cases similar to those which I have mentioned should be undertaken. But even what has been done has shown that very considerable dilatations of pelvis, calices and ureter will contract to a nearly normal state if the obstruction producing them is removed and adequate drainage provided. This is also true of infections as shown not only by the cases of coccus infection of the kidney with multiple cortical abscesses which recover either without any surgical interference or with simple decapsulation but also by the acutely obstructed



Solitary cyst of the kidney is a comparatively uncommon condition. The large size of certain of these cysts together with the lack of symptoms shows that they must be slow growing. But by this slowly increasing pressure kidney tissue is atrophied or destroyed for it is found that the cyst generally extends as far into the

join the kidney and although the lining membrane of the cyst lying in the depression in the kidney is not removed no further regeneration of the cyst seems to follow. Many cases operated upon by different urologists have been treated in this way without, so far as is known, any return of symptoms.



FIGURE IV Solitary cyst of the kidney with marked deformity of the pelvis suggesting a renal tumor. The outline of the cyst at the lower pole of the kidney can be faintly seen opposite the lower border of the third dorsal vertebra.

interior of the kidney as it protrudes from the exterior. In the removal of cyst walls from other parts of the body the surgeon takes great care that no fragment remains, for experience has taught him that such a fragment may give rise to another cyst. In the kidney, however, this does not seem to be the case. The walls of a solitary cyst can be excised close to where they

Such a case came under my care last spring. He was a robust man of 48. Cystoscopic study and pyelogram on several occasions finally led me to a diagnosis of solitary cyst of the left kidney, although owing to hematuria, tumor, delayed secretion, low function and deformed pelvis (Figure IV) the question of neoplasm was seriously considered. At operation a solitary

conservative treatment, which is now employed in such cases. I can report a similar case to Dr Barney's which I saw some years ago. In this case a nephrectomy had been performed against advice for a hematogenous infection of the kidney. Some months later the lesions occurred in the remaining kidney. Renal infections, although not always, are not infrequently bilateral surely reason enough for conservative treatment.

Last winter I had a chance to make an interesting observation on a patient, demonstrating the ability of a kidney long obstructed to come back. This patient two years before had a stone in the lower end of the ureter with dilatation of the ureter and renal pelvis and delayed and impaired renal function on that side. The calculus was removed by ureterotomy. Two years later this patient came back to the hospital to another department, and I saw her and made another pyelogram, and that pyelogram though not normal was in striking contrast to the previous one. The ureter had come down to normal in size, and the renal pelvis had shrunk in size, and the calices which were blunted had returned to a much more normal appearance. I cite this observation to illustrate what the urinary tract can do if given a chance.

Dr Barney spoke of the conservative treatment of traumatic rupture of the kidney. That is an accident that generally comes to the general surgeon. During the war I had the opportunity to see a case, showing the value of conservative treatment. The man was struck by a swinging crane and he came in with marked right sided muscular spasm and pain and he had a urine that was the color of claret but he had a normal pulse and temperature. We watched the man for ten days prepared to operate but his pulse was always good and the hematuria finally cleared up. I have no doubt but that this man had an intrapelvic rupture of the kidney.

P E TRUESDALE M.D. F.A.C.S. Fall River  
Drs Barney and O'Neil have said about everything that is of any importance on this subject and I find it very difficult to weave in a single idea. However I think it is fair to make a prophecy that somewhere along the peak of the conservation wave there will be left occasionally a kidney that ought to be removed. Perhaps that is to be expected. It is much less deplorable to find it necessary to do a second operation to remove a hopelessly-sick kidney than it is to remove a kidney and find it exceedingly difficult to show adequate cause for taking it out. In this class it isn't the average case that presents difficulties, it is the unusual the border-line condition. The kidney that has a definite neoplasm or one that is obviously tuberculous, or another that is ruptured through the cortex to the pelvis or that has one pole detached doesn't present debatable problems, it is early malignancy, the incipient tuberculosis and the rupture of moderate severity that create doubts bearing upon the extent to which surgery is advisable.

We have all witnessed an operation during which a very good surgeon has removed a kidney that might well have been left and given a chance. For the surgeon, who gets out of bounds in this way, to say that some eminent urologist once did the same thing is seeking Job's comfort.

About six months ago a patient was admitted to the hospital giving the classical symptoms of renal stone. The x-ray examination showed that he had four stones in his left renal pelvis. The function of the kidney on the right side was considerably below normal, and the function of the kidney that harbored the stones was nearly zero. At operation the kidney pelvis was opened, and the four calculi removed. Examination of this kidney showed that there was comparatively little renal parenchyma left. To take it or leave it was the problem. There was a time when we felt that if we didn't remove a kidney so obviously damaged we would be unlikely to have another chance but that would not be adequate reason for nephrectomy. I left this kidney and drained the pelvis. At the end of about a month the kidney function on the affected side was nearly as good as the function of the healthy kidney, so that a step, which seemed to point to a second operation resulted in a lesson to give this form of damaged kidney a chance.

What Dr Barney and Dr O'Neil have said upon the remarkable power of regeneration of the kidney has been sufficiently impressive to warrant exercise of the most scrupulous care in selecting the operation of nephrectomy.

ARTHUR L CHUTE, M.D. F.A.C.S. Boston  
Dr Barney's paper about conservatism in renal surgery seems to me most timely. We all remember the time when we were advised to remove the acute hematogenous kidney at once and most of us did do it in a few instances. The fallacy of this procedure was brought home to me by an experience that I had about that time. In a case of this sort, of moderate intensity but with the pain limited to one side I found on catheterizing the patient's ureters that there was practically the same degree of infection on both sides, though the pain was limited to one. This convinced me of the lack of wisdom of doing a nephrectomy in these cases and I began to do a nephrostomy instead, then I contented myself with doing a decapsulation and finally came to doing as Dr Barney suggests that is, do nothing in the way of operative surgery. I am convinced this is the best treatment for all but the very exceptional case and I believe that the great majority of cases when treated expectantly get well with a good functioning kidney.

There is need of sane conservatism in all sorts of renal surgery. There is an unfortunate tendency for a considerable number of the common renal diseases, other than the acute infections, to be bilateral. We see this in nephritis and tuberculosis as well as in the case of congenital cystic kidney and in a considerable percentage

and acutely infected cases which sometimes recover so brilliantly after the removal of a stone from the uretero-pelvic junction. In the case of multiple cortical abscesses there is reason to believe that they subside either by resolution or by spontaneous rupture beneath and outside of the true kidney capsule. In the latter situation a *perinephritis sometimes resulting in abscess* may occur. This may well account for those kidneys which are found at a subsequent operation, perhaps for some entirely different condition, which are densely adherent in a bed of sclerosed fatty capsule and whose true capsule is not only abnormally adherent but dimpled in many places by its intimate union with an ancient abscess cavity lying beneath it. If in a case of hematogenous kidney we decapsulate the kidney these abscesses are given freer and more prompt drainage than would otherwise be the case.

In the extensive infections of the kidney involving more especially the pelvis and calices, generally of the colon bacillus type, I believe that success in preserving such a kidney depends upon draining its pelvis by the through and through method. A rubber tube of small size (about No 16 French scale) and of suitable length, can be passed through an incision in the wall of the pelvis held in the jaws of a small curved clamp. By careful manipulation the end of this clamp can be passed into the middle calyx and then gently worked through the cortical substance so as to bring the tube out of the kidney at about the middle of its greater curvature. In such cases the cortex is often so thin as to amount to but little and in any event the danger of hemorrhage is nil. The tube is then drawn through so that one end of it lies within the pelvic cavity. Another similar tube is then passed into the pelvis through the incision in its walls. Both tubes can be held in by sutures of plain catgut and the distal ends brought out at the posterior angle of the incision in the abdominal wall. Through these tubes frequent lavage of the entire interior of the kidney can be carried out for several days and perfect drainage maintained. Lavage can be done either with 2% mercurchrome or with 5% or even 10% silver nitrate. Sometimes one drug seems to work better than the other but I prefer silver nitrate. The urine will drain freely through one or both tubes and to a certain extent down the ureter as well. Lavage and drainage can be kept up until it no longer seems to be indicated, generally a matter of several days or a week, depending upon the amount and extent of infection, the behavior of the temperature and the amount of leucocytosis. On removing the tubes the cortical opening will generally close promptly, that in the pelvic wall is more deliberate but if it has been demonstrated that the ureter below is patent and straight closure will result without much delay. By adopting this procedure I believe that many a kidney has been or could be saved

and I cannot emphasize its value too strongly.

Much importance should be placed on the post-operative care not only of these cases but on those not having this through and through drainage. Renal lavage should be practised by means of the uretral catheter. In certain instances a large Garceau catheter (No 8, 9, or 10 French) can be used and left in the ureter for one or more days, often the ordinary No 6 ureteral catheter is sufficient. The pelvis can be filled either with mercurchrome or with silver nitrate and allowed to drain until the drug has disappeared and this can be repeated two or three times. Such a lavage can be done at intervals of a week, a fortnight, a month or even longer periods, depending upon the indications and continued for years if necessary.

While in certain cases efforts at conservatism are entirely successful in that the urine becomes essentially normal and that the symptoms of which the patient complained are entirely done away with, it is not to be expected in other cases that there will be such an entirely favorable result. Although there may be no subjective symptoms the urine may continue to show more or less infection. It will generally be found, however, that the kidney function as judged by the phthalein or indigo-carmin test will improve and reach a respectable figure. Furthermore, it is frequently the case that the function of the opposite kidney will show a similar improvement following the removal of the handicap to its mate.

I remarked at the outset that it is quite as unwise to try to save a kidney which may be a menace rather than a benefit to the patient, as it is to remove such an organ without first considering the possibilities that it may be worth saving. In our efforts to adopt the latter course we sometimes may err in the wrong direction and be obliged to remove the kidney at a later time. And this, as we all know, may involve a very difficult operation.

The plea I am trying to make is that we study these cases more carefully both before and during operation. I feel sure that such a study will sometimes enable the patient to make a satisfactory recovery either without operation or without the need of sacrificing what may be a very useful organ.

#### DISCUSSION

R. F. O'NEIL, M.D., F.A.C.S., Boston. Dr. Barney's very interesting and timely paper brings up so many points that one does not know where to begin. I should like to emphasize one or two points. One, the change in attitude of surgeons on the question of the treatment of hematogenous kidneys. Dr. Barney spoke first of nephrectomy being done in all such cases, and then of kidney drainage by nephrotomy, and he spoke of one case that came back three years later with the same lesion on the other side, and then of the

## TWO NEW SIGNS SUGGESTIVE OF CAUDA EQUINA TUMOR

## Root Pain on Jugular Compression and Shifting of the Lipiodol Shadow on Change of Posture

BY HENRY R. VIETS, M.D.\*

**S**PINAL cord tumors above the level of the cauda equina usually cause many symptoms such as, pain, motor paralysis, sensory changes and sphincter weakness and are made manifest by numerous clinical signs, the most important of which are "block" in the subarachnoid space, increase in the protein content of the spinal fluid below the lesion and the arrest of descending lipiodol injected above the obstruction. On the other hand, in patients with tumors of the cauda equina many of the symptoms may be absent and the signs few. It is possible, moreover, to have the single symptom of pain in the lower extremity and back with some rigidity of the spine as the earliest manifestations of a cauda equina tumor. Under such circumstances the diagnosis can only be made by a careful observation of the hydrodynamics of the spinal fluid and by the use of lipiodol. The importance of these tests is emphasized in the following report. A tumor of the cauda equina was suspected and later verified by operation. The patient had only one outstanding symptom, pain, and only one clinical sign, stiffness of the back. The diagnosis was made largely on the basis of the spinal fluid findings and two signs, not hitherto clearly set forth in reports of other writers.

*CASE REPORT Pain in the right leg and back for five months, stiffness of the lumbar spine, partial dynamic and chemical "block" of the spinal fluid, root pain on jugular compression, shifting of the lipiodol shadow on change of posture, removal of tumor of right second lumbar posterior root recovery.*

O. N. C. male 29 referred by Dr. William B. Breed was first seen May 18, 1927, complaining of pain in the lower back, increased when lying down and insomnia. Pain in the leg was first noticed five months before during an automobile trip of several days duration. For several weeks he had attacks of sharp pain in the right thigh with discomfort, between the attacks in the same region. The use of his right leg in driving an automobile increased the pain and driving was therefore given up. The rest afforded him two months of comparative relief. This period however was followed by two weeks of severe pain worse than I ever had before, localized in the right groin and upper thigh. The pain in the leg then disappeared never to return. Subsequently he had pain in the lower back. For six weeks before May 18th, he had not been able to sleep except in a chair owing to this discomfort. A three-day train journey was taken sitting up. There was no sphincter weakness. There were no other symptoms.

Examination of the patient failed to show definite signs of spinal cord disease. The gait was normal. There was some rigidity of the lower lumbar spine

and pain was elicited in this region by acute flexion of the spine. No lateral deformity was noted. The knee-jerks and ankle-jerks were equal and active. There was no ankle clonus and the plantar response was flexor. The Romberg sign was negative. All forms of sensation were accurately perceived in both legs including the sacral fields. Tests for the sense of position of the great toes and vibration sense of the ankle also elicited normal responses. The anal reflex was present. No muscular weakness could be made out. The only clinical sign therefore in addition to the symptoms of pain was the stiffness of the spine.

Lumbar puncture was done in the third interspace May 19, 1927, with the following findings: Initial pressure 120 mm of spinal fluid; respiratory and pulse oscillations normal; jugular compression gave a slow response with a rise of pressure to 200 mm; removal of 10 cc of fluid reduced the pressure to 0 mm. The fluid was slightly yellowish in tint but did not clot on standing. The other findings were: 3 lymphocytes per cmm, 78 crenated red cells, 154 mgm of protein per 100 cc, 61 mgm of sugar per 100 cc, goldsol reaction 0011221000, Wassermann reaction negative. The spinal fluid, therefore, showed a partial "block" of the subarachnoid space, both by the abnormal dynamic tests and the increase of protein.

Combined cistern and lumbar puncture May 24, 1927

	Cistern	Lumbar
Initial pressure (mm of spinal fluid)_____	155 mm	185 mm
Jugular compression raised the pressure to_____	350 mm	210 mm
Removal of 5 cc of cistern fluid lowered the pressure to_____	130 mm	150 mm
Removal of 5 cc of lumbar fluid lowered the pressure to_____	100 mm	0 mm
Total protein (mgm per 100 cc)_____	15	148
Goldsol reaction_____	0111000000	0011220000
Lymphocytes (per cmm)...	2	3

Both fluids were clear and colorless and did not clot on standing.

Jugular compression after drainage of the spinal fluid below the "block" caused intense pain in the anterior region of the right thigh. The pain stopped immediately when the compression was removed. The area of the pain corresponded to the right second lumbar root skin segment. Unfortunately, coughing, sneezing or straining was not tried at this time. The patient, however, previously had not complained of any increase in pain during these acts.

One c.c. of lipiodol (descending) was injected into the cistern with the patient sitting up. Roentgenograms taken by Dr. George W. Holmes a few hours later with the patient lying down showed that the lipiodol had settled down to the level of the junction of the first and second lumbar vertebrae. A slight amount had passed through into the sacrum and there was one small mass retained higher up in the subarachnoid space. Roentgenograms taken later the same day with the patient in the standing position, showed a small mass of lipiodol opposite the

of renal stones In none of these conditions should one do a destructive operation without a thorough investigation of the supposedly well side and a careful weighing of the possible disadvantages I have had the mortification, after the removal of a bleeding kidney, of seeing the patient go downhill due to the parenchymatous nephritis in the remaining kidney, the conservative procedure of doing a decapsulation instead of a nephrectomy would probably have stopped the bleeding and given the patient a considerably longer life

There is another well-intended procedure that often ends in disaster and that is the attempt to remove a very small stone from a kidney On at least two occasions I have injured a kidney so badly in my attempt to find a very small stone that I have been forced to remove it In theory one should remove every renal stone no matter how small it is, in practice I believe that it is best to consider a small stone, say 2-3 mm in diameter as non-operative and to watch it along, especially is this true when such a stone is in a calyx, since attempts at its removal may prove to be anything but conservative

D F JONES, M D, F A C S, Boston I would like to reinforce one thing Dr Barney said about hematogenous infections of the kidney During the war we found that a great many of these cases of hematogenous infection of the kidney quieted down without any operation at all, but some went on to perinephritic abscess I think very few doctors appreciate how often the kidney is infected through the blood stream, and that pain in the right side of the abdomen is often due to a hematogenously infected kidney and not always to an appendicitis

Some fifteen years ago I looked up the cases of perinephric abscess at the Massachusetts General Hospital and found that the duration of time between the onset of symptoms and operation was eight weeks As cases were not numerous in those days it is probable that many cases were cured by waiting

J D BARNEY, M D, F A C S, Boston I have nothing to add to the discussion

*This concludes the group of New England  
Surgical Society Papers in this issue*

"Many patients with spinal lesions especially with intradural new growths complain of pain in the back which is different from the root pain and which is I believe due to irritation of the sensitive inner surface of the dura mater. This would seem to be adequate explanation if we assume that the dura has a segmental distribution similar to that of the skin segment and that the dura lying over the tumor was supplied by the 11th dorsal and adjacent roots.

Rigidity of the lumbar muscles in patients with cauda equina tumors also has not been clearly emphasized in the literature until recently. In a paper by Dr George E Bennett\* four cases of tumors of the cauda equina are reported in each of which marked spasm of the erector spinae and hamstring muscles was the outstanding sign. At least two of the cases are similar to the one reported above. In the first case of Dr Bennett's series there was pain in the back with so marked a stiffness that no motion was possible in any direction. At operation an intra- and extra-dural spinal cord tumor was found presumably in the lower part of the spinal cord although the exact localization is not given. In his third case Dr Bennett speaks of "a very remarkable grade of muscle spasm of the erector spinae group in the lumbar region." The tumor a neurofibroma extended from the 12th dorsal to the 3rd lumbar vertebra "entirely within the pia and lay among the nerve trunks of the cauda equina but was not invading." In the discussion of Dr Bennett's paper Dr A W Adson emphasized the importance of rigidity of the spine as a sign of spinal cord tumor and pointed out that it is an early sign "frequently occurring before paralysis develops." As the rigidity occurs in the same area as the low back pain it would seem that it too might be due to irritation similar to that causing the pain in the back and that possibly Elsberg's explanation for the pain would also be the correct explanation for the rigidity.

**Root Pain.** The second point for consideration is the root pain in the right thigh. It was shown that the tumor although not definitely involving the root structure itself grew from the capsule and therefore must have caused root pain by the stretching of the root itself rather than by actual invasion of it. In the history the root pain was the first symptom and it lasted for five months before operation. It corresponded as it was projected onto the surface to the skin area supplied by this individual root and from a consideration of the area supplied, one was justified in assuming that the pain indicated the localization of the tumor even in the early stages of the investigation. At one time the patient reported that the pain was very severe but two months before operation it disappeared entirely. To explain this change

in the most prominent symptom is not simple. One might consider that as the tumor grew in size, it became less movable and therefore less likely to pull on the nerve root under varying pressures of the spinal fluid. The point to be emphasized however is not the cessation of the pain but that root pain if carefully analyzed will often give an exact localization to the tumor.

**Shifting of the Lipiodol under Change of Posture.** The third point concerns the findings by roentgenologic examination. The lipiodol injected into the cistern fell to the level of the tumor without obstruction higher up. This level however definitely changed on a change of posture. It therefore seems reasonable to assume from this observation that the tumor was lying somewhat free within the spinal canal and not firmly attached to the spinal cord itself. The test was helpful in making a differential diagnosis between an extradural tumor in which one would have expected a fixation of the block if the lipiodol was stopped in its downward course at all and a tumor of the conus which ought also to give a fixed level if the tumor is sufficiently large to fill up the subarachnoid space. It is only with a tumor growing from a nerve root and which rides somewhat freely in the spinal fluid that shifting of the lipiodol is possible. With the aid of this test therefore and with the aid of the root pain one was justified in saying before operation that the patient had a lesion presumably a tumor attached to the right second lumbar posterior root which was riding fairly freely in the fluid surrounding the cauda equina. The diagnosis however, was made much more certain by the next and most important observation.

**Root Pain Elicited by Jugular Compression.** When the spinal fluid was drawn off by lumbar puncture below the tumor the water-bed which had held the tumor up was removed. The tumor was of sufficient size to partly block off the subarachnoid space and therefore there was a column of spinal fluid above the tumor through which pressure could be transmitted. This pressure was transmitted through the agency of the Queckenstedt test (jugular compression) and caused the tumor to sharply descend into a space not filled with fluid. The attached root was therefore pulled upon and pain was immediately felt by the patient in the projected root area. It would seem that this diagnostic procedure gave even more definite evidence of the localization of the tumor than the evidence obtained from the shifting of the lipiodol. The phenomenon was repeated a number of times and in each test the results were the same.

**The Absence of Sensory Loss After Cutting a Single Posterior Spinal Root.** The fifth point for discussion concerns the loss of sensation on the skin over the area supplied by the cut root. It has been pointed out by Sherrington that each root segmental skin area is supplied by

sixth dorsal vertebra, a large, irregular mass opposite the second lumbar vertebra (Figure 1), and a small, round mass opposite the upper segment of the sacrum. With the patient in the prone position,

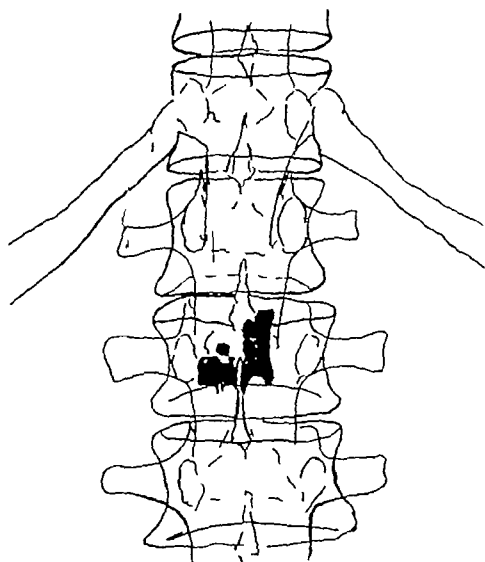


FIGURE 1 A tracing of the roentgenogram taken May 24 1927 with the patient standing showing the lipiodol shadow opposite the second lumbar vertebra

the large irregular mass, seen opposite the second lumbar vertebra in the standing position, had moved up so that it now lay opposite the articulation between the first and second lumbar vertebrae (Figure 2). Examination with the fluoroscope confirmed

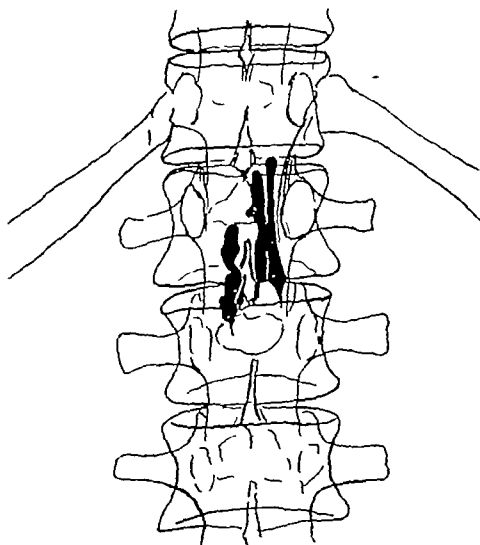


FIGURE 2 A tracing of the roentgenogram taken May 24 1927 with the patient lying down showing the lipiodol shadow opposite the junction of the first and second lumbar vertebrae about one-half a vertebra higher than the shadow in Figure 1

the slight movement of the lipiodol on change of position from the prone to the standing posture.

Roentgenograms taken the next day confirmed the findings of May 24th. The mass of the lipiodol was still opposite the articulation between the first and second lumbar vertebrae when the patient was lying down, it had only slightly changed in shape.

**Laminectomy with removal of tumor.** The patient was operated upon by Dr W Jason Mixter May 28 1927. Laminectomy was done of the 2nd and

3rd lumbar vertebrae. The tumor was felt through the dura and when the dura was opened, a movable tumor was seen to the right of, and in front of the cauda equina, just below the level of the conus of the spinal cord. When the tumor was freed and drawn out, it was found to be intimately associated with the right second lumbar posterior root. This root was cut above and below the tumor and the two structures entirely removed (Figure 3). The

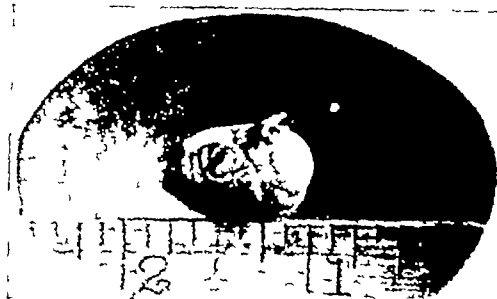


FIGURE 3 The gross specimen showing the attachment of the second lumbar posterior root

tumor, examined microscopically by Dr Charles S Kubik was a perineural fibroma (neurofibroma). It was surrounded by a connective tissue capsule between the layers of which the nerve root was found.

The patient recovered rapidly after the operation and left the hospital in less than three weeks. The pain in the right leg and back did not return and there was no anesthesia of the right thigh in spite of the cutting of the second lumbar root. He was free from symptoms six months after the operation.

#### DISCUSSION

Four important points in the diagnosis may be inquired into: first, the low back pain and rigidity of the lumbar muscles, secondly, the root pain, thirdly, the shifting of the lipiodol shadow when the patient changed from the up right to the prone position, and lastly, the localizing value of the individual root pain evoked by jugular compression after the spinal fluid below the "block" had been removed. In addition, the absence of any anesthesia of the skin following the cutting of a single posterior spinal root should be noted.

**Low Back Pain and Rigidity of the Spine.** Low back pain is a common symptom of cauda equina tumor, although not often referred to in orthopedic or neurologic textbooks. The pain is usually not sharp and is dissimilar to root pain, from which it should be distinguished. In our case the tumor grew from the right second lumbar posterior root, a root which supplies a segmental area over the anterior aspect of the thigh. It would not seem to be likely that an affection of this root could have a referred bilateral area in the lower back in the segmental distribution covered by the 10th, 11th and 12th dorsal roots. One must look for another explanation for the low back pain. Dr Charles A. Elsberg\* has suggested the following

\*Diagnosis and Treatment of Surgical Diseases of the Spinal Cord and Its Membranes Philadelphia W. B. Saunders Co 1916 p 54

"Many patients with spinal lesions, especially with intradural new growths, complain of pain in the back which is different from the root pain and which is, I believe, due to irritation of the sensitive inner surface of the dura mater." This would seem to be adequate explanation if we assume that the dura has a segmental distribution similar to that of the skin segment and that the dura lying over the tumor was supplied by the 11th dorsal and adjacent roots.

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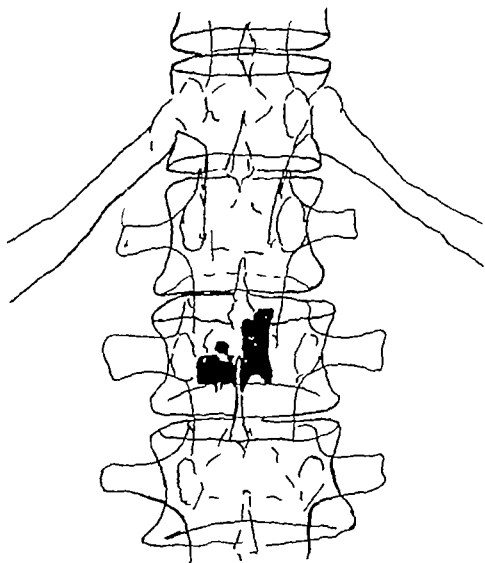


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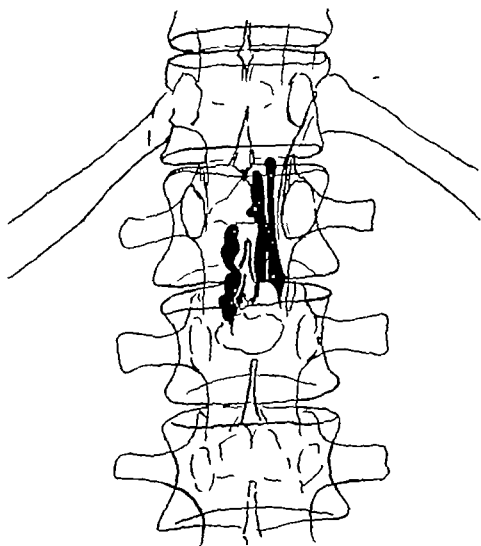


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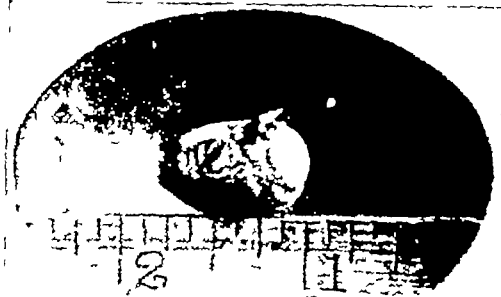


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The patient recovered rapidly after the operation and left the hospital in less than three weeks. The pain in the right leg and back did not return and there was no anesthesia of the right thigh in spite of the cutting of the second lumbar root. He was free from symptoms six months after the operation.

#### DISCUSSION

Four important points in the diagnosis may be inquired into: first, the low back pain and rigidity of the lumbar muscles, secondly, the root pain, thirdly, the shifting of the lipiodol shadow when the patient changed from the up right to the prone position, and lastly, the localizing value of the individual root pain evoked by jugular compression after the spinal fluid below the "block" had been removed. In addition, the absence of any anesthesia of the skin following the cutting of a single posterior spinal root should be noted.

**Low Back Pain and Rigidity of the Spine.** Low back pain is a common symptom of cauda equina tumor, although not often referred to in orthopedic or neurologic textbooks. The pain is usually not sharp and is dissimilar to root pain, from which it should be distinguished. In our case the tumor grew from the right second lumbar posterior root, a root which supplies a segmental area over the anterior aspect of the thigh. It would not seem to be likely that an affection of this root could have a referred bilateral area in the lower back in the segmental distribution covered by the 10th, 11th and 12th dorsal roots. One must look for another explanation for the low back pain. Dr Charles A. Elsberg\* has suggested the following

\*Diagnosis and Treatment of Surgical Diseases of the Spinal Cord and Its Membranes. Philadelphia: W. B. Saunders Co. 1916 p. 54.

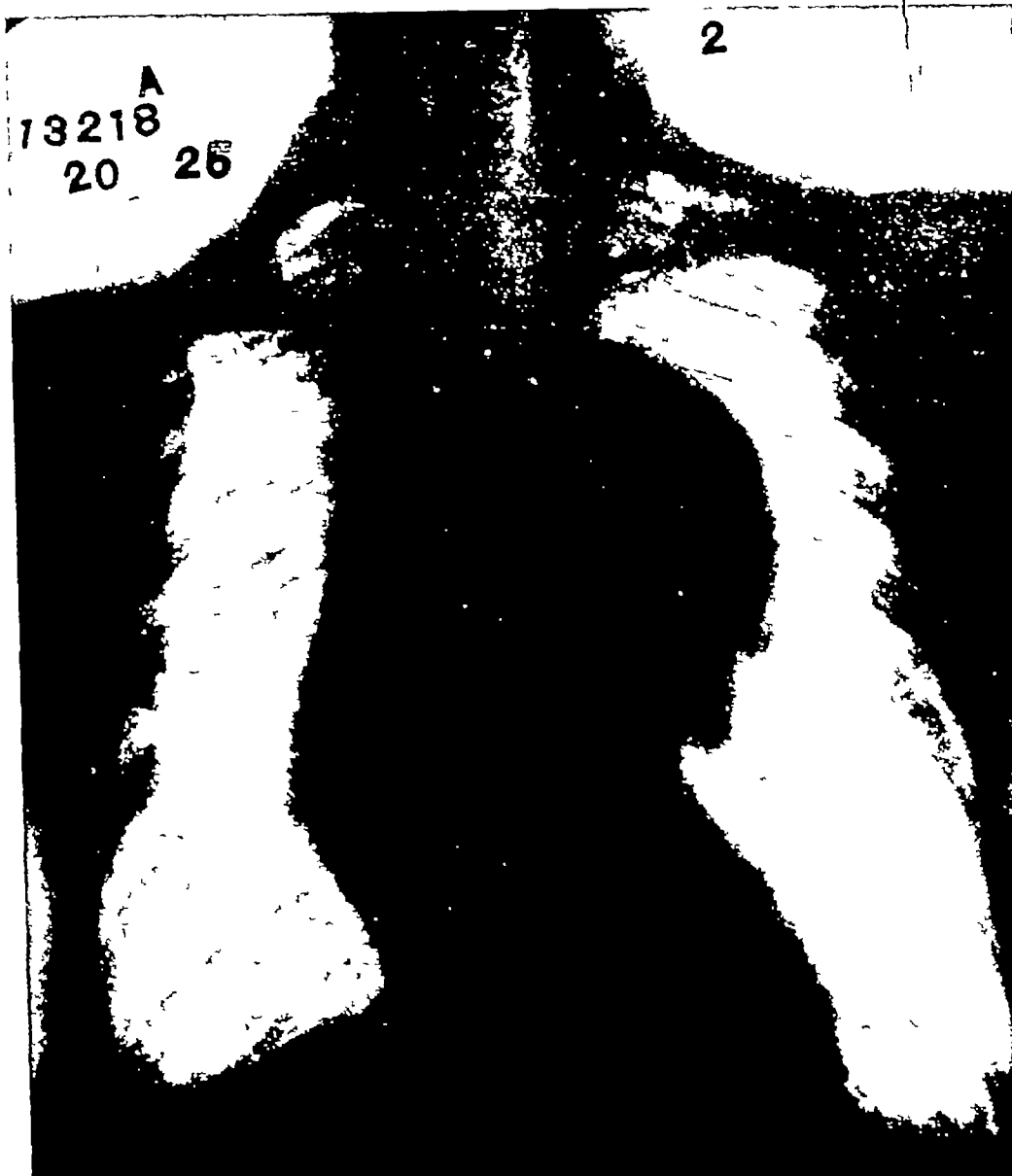
berculosis occurred in 22 instances. He observed that the association of cough with the loss of weight, hemoptysis, and fever made tuberculosis second in the list of wrong diagnoses.

Fanning<sup>6</sup> reports a case of aneurysm in which progressive wasting, cough and hemoptysis, to-

A man aged fifty-two, was referred to the Pulmonary Clinic of the Massachusetts General Hospital on account of a chronic cough.

I H Negative

P H Negative except for a history of having had a chancre thirty years ago for which he received treatment.



X-ray of aneurysm showing compression of left lung giving rise to physical signs at the left apex simulating tuberculosis.

gether with the localization of the physical signs at the left apex, apparently indicated an advanced case of pulmonary tuberculosis with cavity formation.

The following case of aneurysm presents considerable interest in view of the close similarity to tuberculosis in regard to both symptoms and physical signs.

P I During the past year he has had a chronic cough, associated with the raising of from one to two ounces of mucopurulent sputum during the day. He has never had any hemoptysis although he states that at times the sputum has been slightly blood tinged. The cough has never been influenced by exertion or change in position. There has been no history of night sweats. For the past four or five months he has noted a dull pain in his left chest, at times after cough. Previous to his entrance into the hos-

three roots, a single primary root and the roots adjacent to it on each side. It is not possible, therefore, to have skin anesthesia after cutting a single posterior root.

#### CONCLUSIONS

Tumors of the cauda equina, in the early stages of their growth and at a time when they are most easily removable, may cause few symptoms or signs. Low back pain, rigidity of the erector spinae muscles and root pain in one lower extremity, as illustrated by the case reported herewith, may be all the complaints of the patient and all the results of a physical examination. Each sign mentioned, however, is of great importance in the early diagnosis of these rare tumors, although no one is characteristic, the three taken together are at least suggestive of the diagnosis. Hydrodynamic studies of the spinal fluid and roentgenographic examination after lipiodol injection further aid in the diagnosis.

The most helpful tests in the spinal fluid are those connected with the variations in dynamic pressures above and below a spinal cord tumor, which have been fully expounded by Ayer and his collaborators at the Massachusetts General Hospital and elsewhere. Lipiodol has also been a great aid in localizing tumors and in the above case it is pointed out that a shifting of the lipiodol when the patient moves from the prone to the upright position apparently indicates a tumor somewhat movable in the subarachnoid space and usually, therefore, attached to one of the spinal nerve roots. Another test, which has proved to be helpful, is the use of the Queckenstedt test after spinal fluid has been removed below the tumor. If root pain is promptly evoked by this measure, one may presume that the tumor is attached to a definite root and the localization becomes extremely exact. By these measures an early diagnosis of tumors of the cauda equina is more easily made and at a time when complete removal is possible.

## ANEURYSMAL PHTHISIS

### With Report of a Case

BY RANDALL CLIFFORD, M.D.\*

**A**NEURYSMS, causing compression of a bronchus or of the lung itself and giving rise to symptoms and physical signs simulating tuberculosis and other chronic lung conditions, are by no means uncommon. Osler<sup>1</sup> speaks of this condition as "aneurysmal phthisis," and describes it as follows:

"An aneurysm may narrow one or another main bronchus without seriously compressing the bifurcation, or only the branch going to one or another lobe may be involved. This may produce a picture in which the true nature of the disease is obscured. In gradual compression the condition of atelectasis may follow with subsequent sclerosis. This does not often happen to an entire lung, but it may to a lobe or part of a lobe. The narrowing results in retention of secretions and intense bronchitis, sometimes with expectoration of large quantities of mucopus. Dilatation of the bronchi may supervene, but more common and deceptive is the gradual invasion of the lung tissue itself so that the organ becomes consolidated, the bronchi filled with pus, sometimes quite inspissated, and the lung infiltrated, perhaps here and there a cavity formation. The whole process resembles tuberculosis for which clinically the cases are mistaken. There may be areas of consolidation and bronchiectasis in both lungs as results of the tracheal compression.

The growing sac may push aside the lung and compress the upper lobe without causing anything more than slight atelectasis, ex-

pressed clinically by the very important physical sign of feebleness or absence of breath sounds. But the sac may grow directly into the lung, the tissues of which form its actual wall. Under these circumstances, if the sac is small and grows from the terminal part of the arch into the left apex, and if hemoptysis is present, of course the case is mistaken for one of tuberculosis.

In other instances the aneurysm grows into the lung and in the formation of a large sac repeated hemorrhages occur. Complete consolidation may follow."

Bramwell<sup>2</sup> is of the opinion that aneurysms, causing pressure on the lung tissue itself, frequently give rise to cough, expectoration (mucous, mucopurulent or bloody in character), and shortness of breath. If other symptoms and signs of aneurysm are absent or indistinct, the observer may perhaps suppose that he is dealing with a case of phthisis.

Cabot<sup>3</sup> believes that if a portion of either lung is directly pressed upon by the aneurysmal sac, we have signs of condensation of the lung in the area pressed upon.

NoRis and Landis<sup>4</sup> state that in some instances one or the other of the lungs becomes compressed by the aneurysmal sac, and the lung immediately adjacent to the aneurysm becomes congested and atelectatic, and may eventually undergo fibroid changes.

There are numerous instances in the literature in which aneurysms have been mistaken for tuberculosis. Boyd<sup>5</sup>, in analyzing 4000 cases of aneurysm, found that of 130 wrong diagnoses tu-

\*For record and address of author see "This Week's Issue" page 700.

by the history and by careful examination. The difficulty in breathing is usually inspiratory as well as expiratory, and the finer râles which are often present in bronchial asthma are absent here. This form usually occurs in children without a previous history or hereditary tendency to bronchial asthma.

#### ESSENTIAL BRONCHIAL ASTHMA

Essential bronchial asthma depends, of course, upon a sudden turgescence of the bronchial mucosa, or a spasmodic contraction of the bronchial

musculature to the respiratory center, or deficient transference of blood from the left ventricle to the brain with consequent central anoxemia. To express this in other words. Dynamically, the left ventricle serves two purposes, (1) the filling of the systemic circulation (systole), and (2) relieving the pulmonary circulation (diastole). It is the distinction between the effects of these two functions that separates what I have called "pulmonary asthma" from cardiac or center asthma. The two are distinct entities and present differential symptomatic aspects.

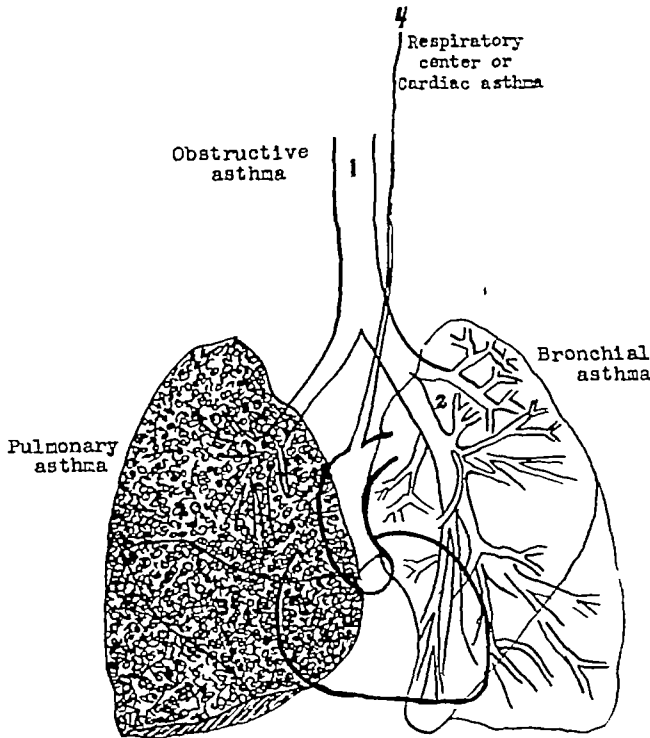


Diagram showing the regions of origin of the various forms of asthma

musculature. The attacks are fairly typical with expiratory dyspnea, wheezing breathing, diffuse pulmonary signs, sibilant and sonorous râles, particularly with expiration and the frequent presence of Curschmann's spirals and Charcot-Leiden crystals in the sputum. The attacks gradually subside after a varying number of hours, or even days.

In bronchial asthma, the hereditary history is usually present, or associated allergic conditions exist in members of the family or in the patient himself. Eosinophilia is found, particularly during an attack. The blood pressure is low and there is no evidence of cardiac involvement.

I shall not go into the specific etiologic classification of bronchial asthma.

In cardiovascular diseases, asthma may result from two entirely distinct mechanisms: (1) Pulmonary stasis and congestion with deficient ventilation and retention of an excess of carbonic acid in the blood, and (2) Deficient supply of

#### PULMONARY ASTHMA OR STASIS ASTHMA

Pulmonary asthma consists essentially of attacks of dyspnea and wheezing occurring with pulmonary congestion in cardiovalvular diseases, and is part of the clinical picture of heart failure. The heart lesions underlying pulmonary stasis are usually stenosis of the mitral valve, auricular fibrillation, or the advanced valvular defects that develop with increasing heart failure. In these conditions, dyspnea may obviously be more or less chronic. Exacerbations, however, in the form of attacks of asthma may often develop after strain or exertion, and the occurrence of these after sudden stress or chronic effort is clinically typical. For these attacks, I venture to suggest the term "pulmonary asthma."

The patient is compelled to rest, seated or quiet in the recumbent position, sometimes for hours or even one or more days, with distressing inspiratory and expiratory dyspnea, orthopnea,

pital, he had consulted a doctor and had been told that he had tuberculosis. During the past month, he has complained of increased fatigue. There has been no loss of weight during the past year.

*P E* The physical examination showed a well developed and nourished man, with normal temperature, pulse, and respiration. The pupils were slightly irregular, the left somewhat larger than the right, and both reacted poorly to light. There were a few posterior cervical glands. The lungs showed dullness at the left apex, both anteriorly and posteriorly, with numerous moderately coarse râles with and without cough. There was definite bronchial breathing over the left apex posteriorly, with increased tactile and vocal fremitus. The right lung was hyperresonant throughout. The heart showed no enlargement. The sounds were very weak and indistinct. No murmurs were made out. The left border of cardiac dullness merged with the dullness at the left apex anteriorly. The blood pressure was 150 systolic, 90 diastolic. There was marked hyperresonance over the supra cardiac area. The abdomen was negative. The reflexes were normal. The sputum consisted largely of mucus. There were no tubercle bacilli found. The urine was negative. The Wassermann reaction was strongly positive. The X-ray examination showed a marked increase in the width of the mediastinal shadow, and this shadow projected both to the right and to the left of the shadow of the spine. In the region of the aortic arch the shadow was particularly marked and extended well into the left lung field. The findings were those of aneurysm. The heart shadow did not appear to be increased in size. The lung fields were clear.

X-ray showing large aneurysm causing compression of the left lung, giving rise to physical signs at the left apex simulating pulmonary tuberculosis.

*Discussion* This case is of peculiar interest in that it emphasizes the close similarity which may occur between tuberculosis and aneurysm. Previous to the patient's entrance into the Out-Patient Department, he had been told that he had tuberculosis. The history of chronic cough, hoarseness, pain in his chest, loss of strength, combined with the physical findings of dullness,

râles and increased breath sounds at the left apex, were consistent with tuberculosis.

There was nothing to lead one to suspect aneurysm before his X-ray and Wassermann examinations had been made, except the history of chancre thirty years ago, and the fact that the left pupil was somewhat larger than the right. The latter finding, however, was perfectly consistent with tuberculosis. Previous to the X-ray, I was inclined to believe that the evidence favored tuberculosis, and was very much surprised to find such a striking X-ray picture.

It was interesting that dullness with increased breath sounds and a few moderately coarse râles were heard at the left apex on physical examination, with no evidence of any pathology shown by the X-ray. I attributed the dullness at the left apex, with the other physical signs simulating tuberculosis, to be the result of compression atelectasis resulting from the large aneurysm pressing on the lung.

As a result of compression atelectasis of the left lung, there was compensatory emphysema of the right lung with marked hyperresonance over the supracardiac area and the aneurysm. This fact would explain the failure to detect the underlying aneurysm, and also the very weak heart sounds which were present.

*Conclusion* A case of aneurysm, giving rise to signs and symptoms simulating pulmonary tuberculosis, is reported. This case, I believe, falls into the group of so called "aneurysmal phthisis."

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## THE CLASSIFICATION OF ASTHMA\*

BY MORRIS H. KAHN, M.D.†

FROM the standpoint of pathogenesis, asthmatic attacks may have their origin in different regions of the respiratory mechanism, including the larynx and trachea, the bronchial tree, the large surface of air vesicles constituting the lung tissue proper, and the respiratory center. From this standpoint, the term "cardiac asthma" is a misnomer. Although it is sanctioned by long usage, it refers to asthma originating in specific stimulation of the respiratory center.

Asthma can therefore be classified into the following groups:

- 1 Laryngo-tracheal or obstructive asthma
- 2 Essential bronchial asthma

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†For record and address of author see This Week's Issue page 700.

- 3 Pulmonary or stasis asthma
- 4 Respiratory center asthma—so called "cardiac asthma."

The first two forms have no relation to the condition of the heart. The remaining two, however, are directly related to cardiac disease.

#### LARYNGO TRACHEAL ASTHMA

Laryngo tracheal asthma has been described as occurring in cases in which there develops sudden obstruction in the upper air passages either due to an inflammatory condition or to the inhalation of a foreign body. Cases of croup in children probably fall into this group. I have seen a fatal case which presented typical clinical asthmatic symptoms due to enlarged thymus with bronchial compression. These cases can be differentiated from the other types of asthma

and sometimes the entire night. He had no wheezing during the attacks. Often, when he fell asleep he had typical Cheyne-Stokes breathing.

The patient had a sallow pale complexion. His heart was considerably enlarged. At the apex the sounds were weak and the first sound was of poor muscular quality. The pulmonic second sound was better audible than the aortic. Occasional ventricular premature beats occurred. The blood pressure varied between 102/90 and 98/64, and showed pulsus alternans. The urine contained albumin and a few hyaline and broad granular casts.

The electrocardiogram showed low voltage right ventricular preponderance, the P wave high, wide and notched in lead II, and the QRS wave was often of nodal origin and aberrant.

*Summary*—Angina pectoris, chronic myocarditis, pulsus alternans, Cheyne-Stokes breathing, attacks of cardiac or center asthma.

#### SUMMARY

1. A classification of the various forms of asthma is presented on the basis of pathogenesis.
2. Special emphasis is placed on the distinction between pulmonary asthma due to passive congestion in the pulmonary capillaries, and respiratory center asthma which has formerly been called cardiac asthma.

## THE RELATION OF ACUTE RESPIRATORY INFECTIONS TO ATMOSPHERIC CONDITIONS\*

BY CHARLES L. BROWN, M.D., AND G. P. GRABFIELD, M.D.

IT is current opinion that there is a definite relationship between variations in atmospheric conditions and the development of acute respiratory infections, and it is generally conceded that the incidence of acute respiratory infections is greater in the winter than in the summer. However, the possible relationship between daily climatic conditions and these infections has been neglected. Indeed, the data acquired by the nation-wide study conducted by the U. S. Public Health Service indicates that the peak of incidence of upper respiratory infections occurs almost on the same date in San Francisco and in Boston.<sup>1</sup> The alleged frequency of respiratory infections amongst nurses in training seemed to provide an ideal opportunity to correlate the occurrence of these infections with local weather conditions.

One of us (Brown), as physician to the nurses, was able to determine with considerable accuracy the date of onset of respiratory infections sufficiently severe to be reported for treatment. This included a much larger proportion of the total number of infections than would be the case in the community at large, owing to the supervision of these girls and the necessity of keeping those with infections from contact with patients. We have included in this study all the cases of simple coryza, acute rhinitis, pharyngitis, laryngitis, tonsillitis and bronchitis reporting for treatment during the periods of study.

Essentially, we were dealing with a population of young women between the ages of eighteen and thirty (except a few of the permanent personnel who are older), living under uniform conditions as to quarters, dress, hours of work, time spent among the population at large, food, etc. This group averaged one hundred forty-eight during the two five months' periods of observation and presented one hundred and one cases

for study. The variation from month to month consisted in a small number going to affiliated hospitals for special training. Roughly one-fifth of the number were new to the hospital in each period of observation. This figure represents the entering class of student nurses. These girls were housed in single rooms in a four-story building, in which heating conditions were found to be uniform. The atmospheric conditions in the immediate surroundings of this group, obtained by taking wet and dry bulb temperature readings twice a day in the common room of the nurses' home, showed the heating to be remarkably constant. This room was selected because random observations at various locations in the home showed that the temperature of this room could safely be used as an index of that throughout. We also read the temperatures twice daily, in the rooms of those nurses who were ill with respiratory infections, and continued readings for at least three days after they had returned to work. This was done in order to find out whether those nurses who were ill kept their rooms at a strikingly different temperature from what might be considered usual. It may be said at this point that the temperature variations in the nurses' rooms was parallel to that in the common room at about the same level. The temperature of the wards and operating room is charted daily and regulated very carefully by the central heating plant, and thus the atmospheric conditions in the places where the nurses are on duty are very constant.

All the data were charted on a sheet too large to be conveniently reproduced. On this chart was shown the general weather conditions (mean dew point, mean relative humidity, mean barometer, mean temperature, maximum and minimum temperatures, total precipitation, hours of sunshine) and dry and wet bulb temperature in the common room of the nurses' home and in the rooms of nurses ill with colds, and the incidence of respiratory infections. The figures for the

\*From the Medical Clinic of the Peter Bent Brigham Hospital.

†For records and addresses of authors see "This Week's Issue," page 769.

wheezing and a varying degree of cyanosis. Pulmonary hemoptysis is frequent. The attacks may gradually subside, or with increasing stasis, may end in pulmonary edema.

On physical examination, signs of valvular involvement are present, with accentuated pulmonary second sound. The pulse is usually rapid, small, compressible, and is often completely irregular. The blood pressure is low. There are wheezing, sibilant moist râles scattered over the lungs, with signs of congestion at the bases and also congestion of the liver and edema of the extremities. The vital capacity is in general much diminished, as the pulmonary capillaries are overlaid. Oxygen is of considerable benefit in these cases.

Pulmonary asthma has reference to passive congestive changes in the pulmonary capillaries, which is also the location of the pathologic changes in "pulmonary emphysema."

#### CARDIAC ASTHMA—RESPIRATORY CENTER ASTHMA

Cardiac asthma is essentially a respiratory center phenomenon due to a deficient arterial systemic circulation producing central anoxemia. It is due to the propulsive weakness of the left ventricle.

Quite in contrast with pulmonary asthma, the main conditions in which cardiac or central asthma occurs are the aortic lesions and coronary arterial disease, hypertension, pulmonary emphysema, and chronic interstitial nephritis—all evidence of general arterial changes.

The attacks are usually nocturnal. The patient is awakened suddenly with a feeling of suffocation, great distress, and pallor. He sits up in bed and breathes in deep and labored fashion. Wheezing sounds may appear in the chest, and he may cough up some frothy phlegm. Anginal pains are often present. The attack may last for half an hour or longer, and recur when the patient again falls asleep.

The heart may show occasional or frequent extrasystoles. The pulse is usually full and of high tension and often shows marked pulsus alternans. The blood pressure is usually high.

In the lungs, the signs of congestion are often absent, but there may occur tracheo-bronchial wheezing. The attack subsides partly because of the increased peripheral circulation produced by vasoconstrictor action and muscular movement. It usually does not go on to pulmonary edema.

The outcome of an attack may be twofold. If the aeration does not become adequate, paralysis of the respiratory center may result and death suddenly ensue during the attack of gasping for breath. The second eventuality is heart failure, the left ventricle dilating as a result of the continued peripheral resistance.

Morphine lowers the irritability of the respiratory center, making it less sensitive to anoxemia, but oxygen in these cases does not give relief.

#### CASE REPORTS

The following cases illustrate the distinction between pulmonary asthma and cardiac asthma.

**CASE 1** Mrs G D, aged 39 years, suffered from dyspnea and palpitation and had well-developed rheumatic mitral regurgitation and stenosis. She had sudden attacks of cough, wheezing and hemoptysis, which recurred after excitement or exertion and were relieved by rest. These often continued for several days both when the patient was awake and during sleep. High pitched and moist râles were found scattered over both lungs.

**Summary**—These were attacks of pulmonary asthma following effort—a premonitory occurrence in heart failure. The patient improved under digitalis medication so that the lung signs cleared and the vital capacity increased.

**CASE 2** Mrs B K, aged 42 years, had mitral stenosis and auricular fibrillation. She had periods of decompensation with moderate edema and pulmonary asthma for which she had to remain in bed for several days at a time.

In these attacks, she was slightly cyanosed. The lungs showed scattered and moist râles and dry bronchitic wheezing. The liver was enlarged and there was moderate pretibial edema. The vital capacity of the lungs was much below normal. The electrocardiogram showed right ventricular preponderance and auricular flutter which, under digitalis medication changed to coarse auricular fibrillation.

At one time, she had a sudden attack of burning pain and a sense of vise-like compression across the lower chest which soon diffused upward, radiating to the left pectoral region and both scapulae. This lasted ten minutes and left her very weak for several hours. The pain recurred together with attacks of characteristic respiratory center or cardiac asthma with gasping breath, dyspnea, orthopnea, wheezing cough and expectoration lasting about one hour.

**Summary**—Long standing mitral stenosis, auricular flutter, auricular fibrillation, repeated attacks of decompensation with pulmonary asthma, attack of angina pectoris, recurring together with attacks of cardiac or center asthma.

**CASE 3** J S M aged 65 years had an attack of coronary thrombosis five years before with acute pulmonary edema. Since then he had suffered increasing dyspnea and at times slight cyanosis, both of which were relieved by oxygen inhalation and rest. In these attacks, often for days, the patient reclined on pillows or in a chair slightly cyanosed, dyspneic, wheezing and coughing. These were attacks of pulmonary asthma. He developed considerable edema of the feet and legs, enlarged liver and a moderate degree of ascites. The heart was enlarged to the left, the first sound weak.

During the past year often when just about to fall asleep, he has awakened with a feeling of breathlessness for which he had to walk about or sit in a chair for perhaps fifteen minutes, and then again attempt to sleep. These were typical attacks of cardiac asthma.

**Summary**—Attacks of pulmonary asthma with subsequent attacks of cardiac or center asthma in the course of progressive myocardial disease.

**CASE 4** M R at the age of 40 had a sudden attack of vise-like pain in the chest with a severe gripping pain in the left elbow. This lasted a few minutes and recurred often with a sensation of suffocation and air hunger. During the night he would awake with attacks of compelling dyspnea during which he had to get out of bed and stand supported against a wall gasping for breath. These lasted a few hours.

and sometimes the entire night. He had no wheezing during the attacks. Often when he fell asleep he had typical Cheyne-Stokes breathing.

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general weather conditions were obtained from monthly meteorological summaries, for which we are indebted to Mr G. A. Loveland, Meteorologist of the local station of the U S Department of Agriculture, Weather Bureau. In addition, we studied the relationship between the respiratory infections and data derived from the foregoing, such as the daily spread of temperature between the maximum and minimum and the

abscissa represents a consecutive ten-day interval, thus, the first division covers the first ten days in December, the second division, December tenth to nineteenth inclusive, and so on. In the first section of observations, the incidence of respiratory infections shows a fairly level curve with comparatively slight variation until the eleventh period is reached, where there is a peak of increased incidence covering a thirty day

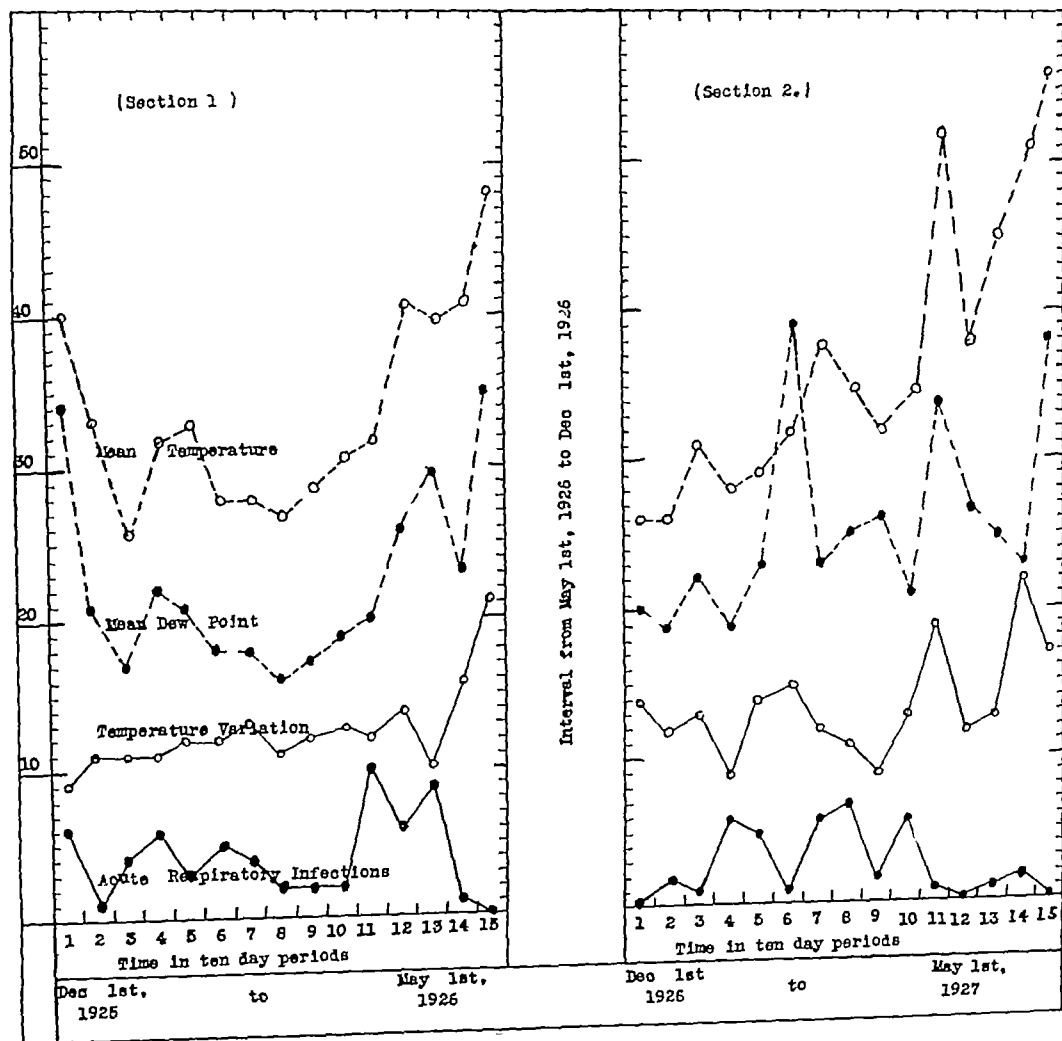


FIGURE 1

variation between the wet and dry bulb reading in the home and nurses' rooms

In the accompanying charts we have omitted all of the above data that obviously bore no relation to the incidence of infections. Furthermore, these charts have been condensed by showing ten-day averages instead of daily figures. The period of observation was divided into two sections, beginning on December 1 and ending on May 1, in 1925-26 (Sec 1) and 1926-27 (Sec 2). These periods were chosen because experience has shown that relatively few respiratory infections occur from May 1 to December 1 in this group of individuals. Each division on the

period (April). In the succeeding year, the incidence curve is entirely different in character and seems to show three less definite peaks from the fourth to the tenth period (January to March), probably representing an increased incidence of low grade.

Considering the other curves in relation to these increases in respiratory infections, it seems clear that in both sections the incidence rises as, or just before, the mean temperature rises. In the second section, the mean temperature begins its rise in the third period and the general trend continues upward, with variations, to the end, whereas in the first section, the upward trend

does not become apparent until the ninth period. In each case, the peak of incidence comes at, or about the beginning of the rise of the mean temperature curve. This coincides with the observations of Smiley<sup>2</sup>. The same thing is true of the dew point curve, although in the second section the upward swing is not so definite. The third curve on Fig 1 shows the average difference between the daily maximum and minimum temperatures, and seems to be reciprocally correlated with the decline after a peak in a secondary fashion, in other words, after the peak of

other (cf Fig 2). This indicates that the relationship is not a simple one and that if the atmospheric conditions per se have any effect it must be sought in a combination of two or more factors. In these charts there is the suggestion that the combination of rise in temperature associated with fall in sunshine may be a combination favoring the onset of respiratory infections similar to Hill's findings in relation to the incidence of pneumonia in children<sup>3</sup>.

Obviously, the next consideration was that of contact infection. We could not demonstrate

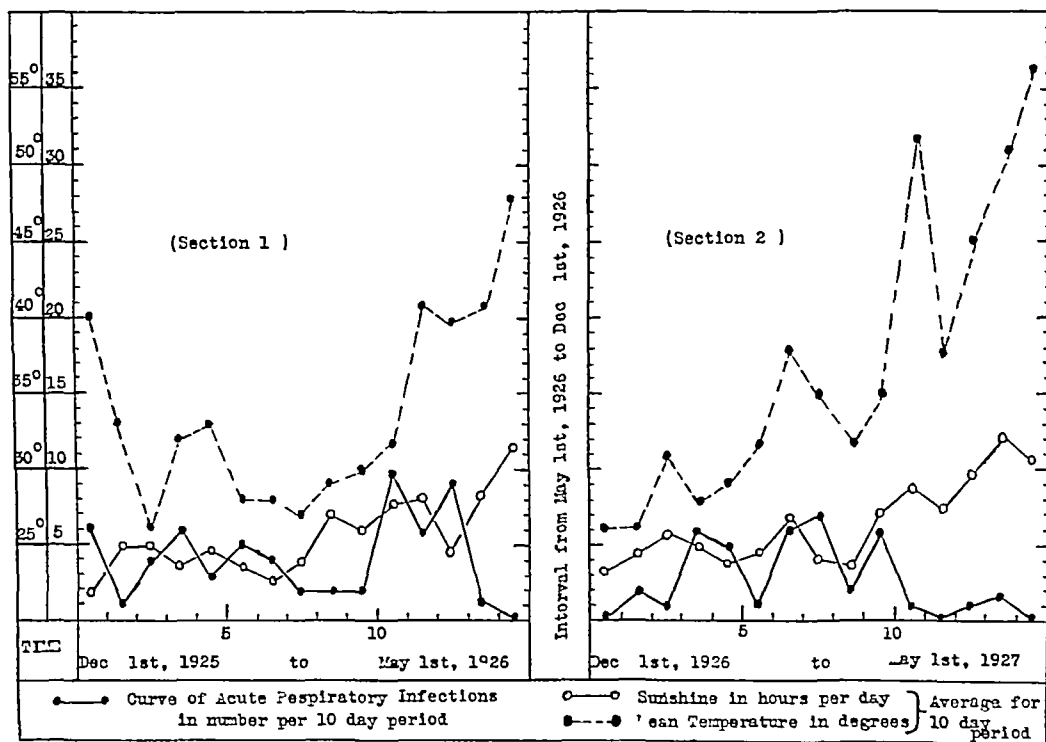


FIGURE 2

respiratory infections is passed, there seems to be a reciprocal relationship between an increase in the daily variation of temperature, associated with a rising mean temperature, and a decrease in respiratory infections.

Most closely correlated with the incidence of respiratory infections is the number of hours of sunshine (cf Fig 2) which almost period by period seems to show a reciprocal relationship. However close the relationship of atmospheric conditions to the incidence of acute respiratory infections, we have no evidence that atmospheric conditions, as such, are the only factors in etiology. Here it should be pointed out that in these relationships we are confronted with what appears to be a logical fallacy. We have seen that the incidence of acute respiratory infections can be correlated positively with mean temperature and negatively with hours of sunshine, but it is equally true that hours of sunshine and mean temperature are positively correlated with each

and any relationship between the occurrence of infections and the location of the nurses' rooms in the home. When we tried to correlate the distribution of the cases with the place of work there seemed to be a greater incidence on two of the wards. However, taking the number of personnel into consideration, it was found that the apparent increase was not statistically significant. As to contact, it was found that contact between successive cases at the place of work presented an almost exact counterpart of the theoretical chance distribution of the number of cases observed.

As to the number of cases, it is evident that the total incidence of respiratory infections amongst our nurses is at least six times less than that in the population at large. The average per person is one-third cold per year as compared with two per year in the general population<sup>4</sup>.

The data here presented are too limited for

general weather conditions were obtained from monthly meteorological summaries, for which we are indebted to, Mr G A Loveland, Meteorologist of the local station of the U S Department of Agriculture, Weather Bureau. In addition, we studied the relationship between the respiratory infections and data derived from the foregoing, such as the daily spread of temperature between the maximum and minimum and the

abscissa represents a consecutive ten day interval, thus, the first division covers the first ten days in December, the second division, December tenth to nineteenth inclusive, and so on. In the first section of observations, the incidence of respiratory infections shows a fairly level curve with comparatively slight variation until the eleventh period is reached, where there is a peak of increased incidence covering a thirty-day

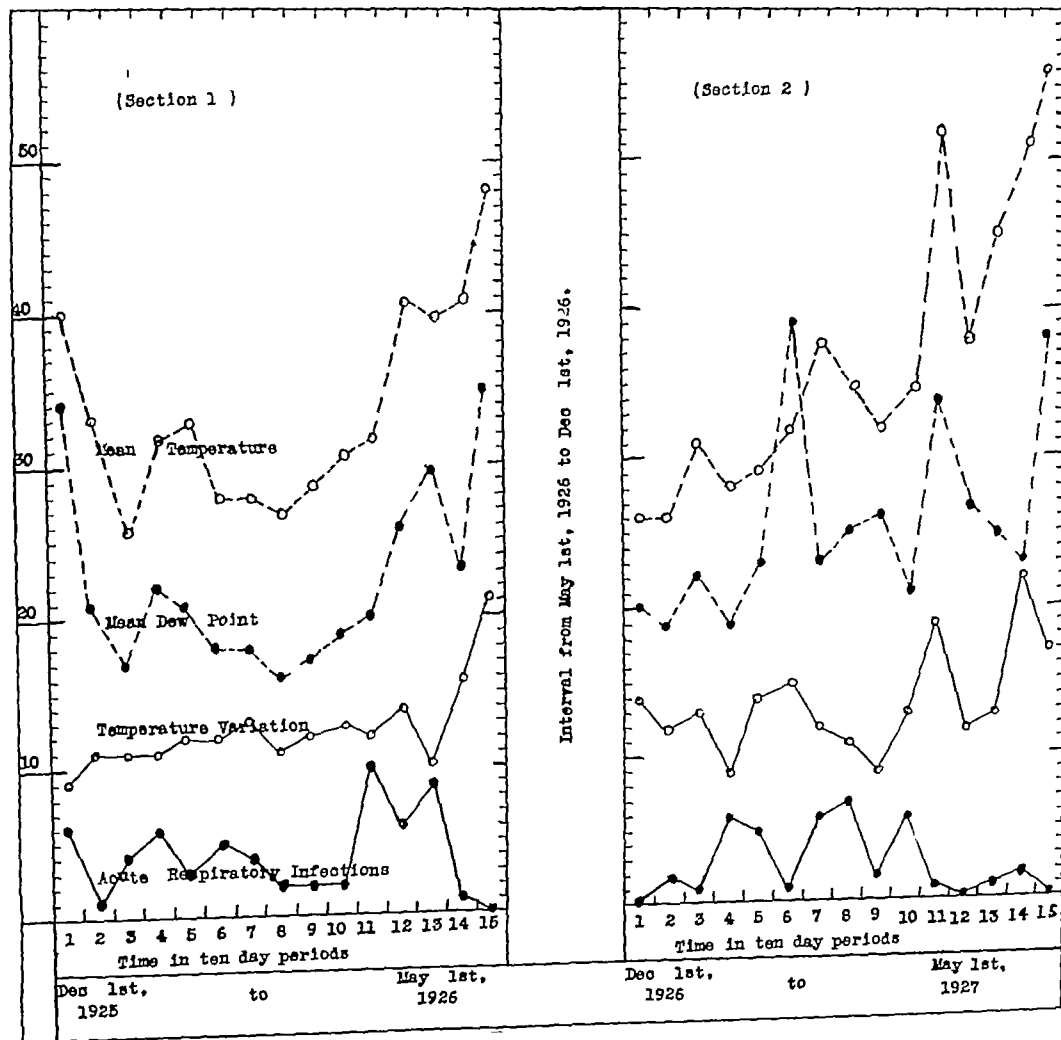


FIGURE 1

variation between the wet and dry bulb reading in the home and nurses' rooms

In the accompanying charts we have omitted all of the above data that obviously bore no relation to the incidence of infections. Furthermore, these charts have been condensed by showing ten-day averages instead of daily figures. The period of observation was divided into two sections, beginning on December 1 and ending on May 1, in 1925-26 (Sec 1) and 1926-27 (Sec 2). These periods were chosen because experience has shown that relatively few respiratory infections occur from May 1 to December 1 in this group of individuals. Each division on the

period (April). In the succeeding year, the incidence curve is entirely different in character and seems to show three less definite peaks from the fourth to the tenth period (January to March), probably representing an increased incidence of low grade.

Considering the other curves in relation to these increases in respiratory infections, it seems clear that in both sections the incidence rises as, or just before, the mean temperature rises. In the second section, the mean temperature begins its rise in the third period and the general trend continues upward, with variations, to the end, whereas in the first section, the upward trend

divided From an occupational standpoint there were

Tobacco workers	10
Janitors	8
Stone workers	6
Students	5
Physicians	1
Nurses	2
Chemical workers	12
Cooks	3
School children	3
Total	50 cases

All but two of the patients were either born, or spent most of their lives in New England, whether or not this was a significant factor or only a coincidence is difficult for us to state. It might be of interest to learn about this etiological point from other observers in different climates and other parts of our country.

Accessory sinus disease may produce this form of rhinitis, although the reverse is generally true. (Repeated attacks of acute catarrhal rhinitis finally result in the production of this chronic condition.) This is accompanied by the repeated congestion to which the mucosa is subjected, as well as by the stasis of blood and the infiltration of the mucosal interspaces with exudate. Sometimes this disease is a local expression of some systemic condition like anemia, rheumatism, scrofula, syphilis or diseases associated with defective elimination.

Gastric conditions are not infrequently a cause, either through gases which are expelled from the stomach thus reaching the nose, or on account of extended inflammation. It has been stated by good authorities that morphologically and embryologically the nasal mucosa is a continuation of the gastric mucosa.

This lesion is also produced in connection with an accompanying chronic diffuse nephritis, cardiac condition, or chronic constipation.

#### SYMPTOMS

Obstruction is one of the most constant and persistent symptoms of this disease. This obstruction varies in degree in different patients, and at different times in the same patient. Both sides of the nose may be obstructed so that nasal respiration is interfered with, or one side may be closed and the other remain free, or it may alternate from side to side. The difficulty is generally produced by an engorgement of the mucosa of the turbinates, of the septum, or both. When obstruction is purely congestive, the degree of variation is a marked feature, but as the disease progresses, the congestion becomes constant, exudate appears in the mucosa, and the impediment which formerly occasionally disappeared, now becomes constant. This insidious development of nasal obstruction is often not observed by patients, but they sometimes notice that the periods of relief are fewer and the

sensation of stuffiness in the nose is more constant as the thickening progresses and increases. The interference with the respiration is usually worse at night, and is most marked in that side upon which the patient rests. Relief of the obstructed nostril may be obtained by changing the position to the other side which will then cause that side of the nose to slowly become occluded. The obstruction is aggravated by "catching" fresh colds, to which the patient is particularly susceptible, and this is repeated many times each winter, until finally the nostrils become so sensitive to slight changes in temperature that the condition is present practically all the time. The obstruction gradually increases, the periods of relief become fewer, and ultimately stenosis is permanent.

Mouth breathing is the result of the above nasal symptoms and bears a direct relation to the degree of nasal stenosis. Cough is present and is aggravated by thickening and dry phlegm on the pharyngeal wall, inflammation of the fauces and the pharynx results from constant mouth breathing and the more serious effects are seen in the patient's general condition. One of the most important functions of the nose is to add to the inspired air a considerable quantity of water for the purpose of preserving the moisture of the inspired air in the alveoli of the lungs and facilitating the exchange of gases. (The supply of moisture being absent from the nose and venous sinuses present there, naturally the air will absorb the fluids which cover the larynx, bronchi and the alveoli of the lungs.) As these supply an insufficient quantity of fluids to saturate the air, their surfaces are completely dried. As a result of the interference of proper gaseous exchange and because of the dried membrane, oxygen starvation and carbonic acid saturation with resultant long lists of attendant woes and general systemic symptoms like anemia, uric acid conditions, lassitude, disturbance of mentality, loss of memory, inability to concentrate, indigestion, constipation, general pains and aches, dyspnoea, bronchitis, catarrh of the lung apices, asthma, cardiac palpitation, predisposition to tuberculosis, neurasthenia, myasthenia, loss of weight, insomnia and chronic headaches may occur.

#### DISCHARGE

The discharge from the nose is always increased. Under normal conditions, the balance of the secretions of the mucosa is so nicely adjusted that the patient never needs to remove them, but in chronic hypertrophic rhinitis, the production is so increased that the patient either blows it from the nose or draws it back into the nasopharynx. The character of the secretions is changed, becoming viscid, sometimes starchy, and is often expectorated in little adhesive masses of very tenacious pearly particles.

extensive discussion. However, they are suggestive and are presented to stimulate the collection of similar data elsewhere in order that the figures may ultimately be combined in sufficient numbers to be statistically significant. In conclusion, we feel that this small study tends to show that upper respiratory infections are unusually infrequent in nurses, that the relationship of the incidence of these infections to weather conditions is not a simple one but with a combination of two or more factors, and, finally, that in this group, contact as a factor in the incidence of upper respiratory infections, in years when no epidemic existed, cannot be demonstrated.

#### SUMMARY

1 The incidence of upper respiratory infections amongst the nurses of the Peter Bent Brigham Hospital was studied during two five months periods, beginning December 1 1925, and December 1, 1926.

2 In the periods of observation, a total of one hundred and one cases were reported.

3 Temperature observations in the living room of the nurses' home and in the rooms of nurses who were afflicted with upper respiratory infections and the meteorological data published

by the local weather bureau were charted against the incidence of these infections in ten day periods.

4 We were able to correlate the incidence of upper respiratory infections with the mean temperature in a very general way. The reciprocal correlation between this incidence and hours of sunshine seemed closer. The closest correlation was between incidence and rise in mean temperature accompanied by fall in sunshine.

5 Contact as a factor could not be shown to exist either in relation to the location of the nurses' rooms or their places of work.

We are indebted to Miss Carrie M. Hall, Superintendent of Nurses, for her co-operation, and to Miss Helen Blaisdell of the Training School Office for reading the temperatures in the Nurses' Home.

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## A RATIONAL TREATMENT OF HYPERTROPHIC RHINITIS

BY LOUIS FELDMAN, M. D. \*

SEVERAL years ago, we had quite an interesting discussion with a prominent Boston laryngologist in regard to chronic hypertrophic rhinitis and the comparative merits of the various methods of treatment advocated and used, with little if any success in the majority of cases. In the conversation, the question was brought up as to whether or not physical therapeutic measures offered anything new or hopeful in the treatment of this aggravating, distressing, and more or less hopeless condition. At that time, the laryngologist offered me the opportunity of beginning experimental work on a series of long-standing cases at his clinic in which the correctness of the diagnosis had been definitely established and every known therapeutic measure had been tried with slight, if any, relief over a long period of time of constant, careful observation and painstaking effort. I began my work at his suggestion in 1922, at the Boston Dispensary, and to date, I have followed up and completed treatment at the Reconstruction Clinic of 50 cases. The results have been so gratifying that it seemed worth while to mention the method of treatment used for its relief and cure of such a common stubborn malady.

In order to understand the reasons for the

use of the various modalities in the treatment of this condition, let us briefly review the various facts known about it, its etiology, methods of diagnosis, prognosis and treatment. Under the latter we shall include the method advocated and used by us in the series of cases, with comparative results.

#### DEFINITION

A chronic catarrhal rhinitis is a nasal lesion of long duration, characterized by disturbances of circulation and secretion, obstruction to nasal respiration, and alteration of the physiological function of the nose with a thickening and hypertrophy of the mucosa or a periostosis of the turbinate bones.

#### CAUSES

A continuous or repeated irritation of the nasal mucosa is the most frequent cause of this disease in the northern and western parts of this country. Among other active irritants are snuff, smoke, continuous damp atmosphere, and impure air, thus the disease is most common among cigar workers, millers, cement makers, cutlers, molders and chemical workers.

In our series of cases age was apparently not a factor. The youngest treated was ten years old, the oldest seventy. The sexes were evenly

\*For record and address of author see "This Week's Issue" page 700.

Now it was reasonable to assume that if the anode (positive pole) could be successfully applied against the hypertrophic mucous membrane for any length of time at repeated intervals something definite might be accomplished in the way of improving the treatment of this distressing malady, producing the good effects desired without the bad effects of destruction of excessive tissue with its various complications and ultimate deleterious results aforementioned.

#### TECHNIQUE

1 A monopolar high frequency current from the Oudin coil is applied by means of a non-vacuum flat nasal electrode and is inserted into one side of the nose and held there up against the tissues of the nose, the current is gradually turned on and the spark gap regulated producing a slight tingling sensation the electrode later becoming comfortably and tolerably warm. It is kept there for about ten minutes thus producing after this preliminary treatment a rather marked hyperemia of the previously pale, boggy hypertrophied membrane the mucous membrane is now in a receptive "mood" for the subsequent treatment.

2 A flat copper nasal electrode covered with cotton and moistened is then applied against the tissues intra-nasally and attached by means of an insulated wire to the "active" positive pole of a galvanic apparatus, the larger indifferent moistened pad size six by four, coming in contact with the patient's chest in the sternal region anteriorly. In the meantime the mind and hands of the patient are kept busy holding the pad in place. (I have also found that by placing the large indifferent electrode anteriorly as described above instead of in the cervical region of the spine in back as is sometimes advocated that in the treatment of this particular condition I have been able to use considerable more volume by my method of current than would have otherwise been possible without encountering varying degrees of discomfort that arise from attempting to pass galvanic current through the head and brain.) Then the current is gradually turned on, taking into consideration both the patient's feelings and the milliamperemeter reading. The average dosage used was about three to eight M.A. for about ten minutes, then the entire process preceded by the high frequency treatment is repeated in the other side of the nose. By means of the copper electrode we also have a certain amount of copper ionization taking place, copper oxychloride being deposited in the tissues with additional antiseptic and astringent effects.

The average number of treatments given was ten. The interval between treatments was about forty-eight hours. The average duration of treatment was twelve minutes. In the 50 cases observed and treated, the results were as follows: relief or improvement was first noticed after about the fourth seance, manifested by both

symptoms and signs, subjective and objective, as described by the patients and checked up by the results of repeated examinations during the course of treatment and observation and later by interviews personally and by means of correspondence and communication over a period of approximately five years. Our conclusions were as follows: total number of cases treated 50, total number of treatments given 512, total number cured 28, (56%), total number improved 12 (24%), total number unimproved 10 (20%). Eighty per cent therefore, were entirely cured or relieved. These figures seem almost unbelievable, but the facts and the cases stand out as their own evidence and proof, and were a revelation to us.

It is my opinion, therefore that if there were a concentrated effort on the part of the medical profession in general and of the laryngologists in particular especially those connected with large clinics and having ample opportunity, facilities and material to carry out some further research in this and other fields of endeavor in the various branches of medicine, that the true unbiased, conservative opinions and value of physical therapeutic measures in the treatment of so-called various chronic and acute disease conditions might yet receive a new stimulus of hope through physical therapeutics the most recently accepted adjunct to our therapeutic armamentarium.

#### CONCLUSIONS

Standard classical methods in the treatment of chronic catarrhal rhinitis with hypertrophy have been found to be of no curative and only of little palliative value.

The results we have obtained warrant that more of this type of work should be done by careful, conservative laryngologists, with a good scientific training in the uses of physical therapeutic measures, who could apply them intelligently whenever indicated, without bias, and thus evolve a new very useful measure for the relief of the many sufferers with this dreaded disease.

Physical measures have proven in our series and in the hands of other experienced operators to offer a new means of successful treatment with a greater percentage of relief and cure than heretofore otherwise offered and are therefore worthy of further observation, investigation and confirmation.

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- Electrotherapy—Eaton Grover.
- Handbook of Electrotherapy—Duggan.

I wish to express my sincere thanks and appreciation to Dr. Louis Arkin for his original suggestion at the Boston Dispensary and my associates at the Reconstruction Clinic for their many valuable suggestions and sincere co-operation that made these results possible.

It is usually white but may become yellow or green from time to time, or take a brownish or reddish tint by admixture with blood

Coughing, hawking and spitting are constant symptoms, present in varying grades of severity. In some patients they are mild, but in others they are very severe and cause considerable annoyance and are often the symptoms for which the patient first seeks relief

Anosmia, or disturbance of the sense of smell, is usually present. The perception of odors may be diminished or entirely absent, or the discernment of certain odors only may be lacking, in a few cases this sense may be entirely destroyed

Pharyngeal irritation is usually present. It causes pain and a sense of thickening or stiffness of the throat, a sense of dryness on the pharyngeal wall and a desire to swallow

Vomiting often occurs in the morning, and results from attempts on the part of the patient to remove the dried and thickened mucus from the nose and throat by hawking and spitting

#### EXAMINATION

The condition of the membrane may be studied by anterior rhinoscopy. The membrane will be found to be hyperemic and reddened in spots, and may show superficial ulceration and surface bleeding. It is generally swollen either from congestion, oedema, or hypertrophy of the mucosa, it is the latter type that I am mostly concerned with in this paper and will attempt to describe and differentiate from the other conditions. Pledgets of cotton of 4% cocaine solution in 1 to 10,000 adrenaline are applied to the nose and are allowed to remain there *in situ* for about four or five minutes. A comparative study may be made of this condition before and after application of the above medication. If congestion only was present, the membrane will be whitened and the swelling will have disappeared, while the anatomical relations are again normal for the time being. If a hypertrophic or a hyperplastic condition is present, however, the membrane will be anemic, but the mucosa will not contract and the hypertrophied areas will appear as white boggy swellings which are easily identified by means of a probe, which will indent them and show the mucosa is not tensely contracted against the framework of the nose but is loose and flabby. This is especially characteristic of hypertrophies of the turbinate bodies. There is, however, a general increase in quantity of all the tissue in the nose, generally situated over the inferior turbinate bone, either at the anterior end, along the lower border, or frequently at the posterior end. In some of the cases there may be accompanied bone thickening. When the thickenings are located within the septal tissue they occur only over a spur, or as a diffuse thickening of the mucosa and perichondrium, occasional septal thickenings being limited to the posterior edge of sep-

tum. There may be various appearances, depending upon the location and extent of the hypertrophied process, and upon the degree and type of degeneration that has taken place in the tissues, producing therein a condition like the mulberry type of degeneration, or polyps

#### TREATMENT

As far as a method of handling this condition is concerned, several factors are to be considered. One must have a means by which the status of the membrane may be altered, the circulation and nutrition of the tissues improved, and the excessive tissue shrunk without actually destroying mucous membrane and surface area, thus preventing complications and the much dreaded sequela, atrophic rhinitis, with its various distressing accompaniments

It is only since the discovery of cocaine that the treatment of this disease has been at all satisfactory even to the degree of palliation. Previous to the use of cocaine as a local anesthetic, laryngologists treated it with medicinal agents and chemical cauterizants applied by means of a cotton probe locally, chromic acid, monochloroacetic acid, nitric or orthochlorophenol acids, with very disappointing results. With the advent of this satisfactory local anesthetic and improved methods of operation, there was a greater percentage of cases relieved by means of the galvano cautery, which for a time promised brilliant results, and was a favorite form of treatment, gradually, however, it fell into disrepute because the use of the cautery resulted in definite and considerable destruction of an excessive amount of the tissue, ending in the development of atrophic rhinitis, leaving the patient in a worse condition than before

The methods that I have employed were the same as those used by many others before I attempted them except for several little modifications necessarily made as the needs required after a careful study and observation of the cases that came under my care

Galvanic current with its polarity effects was the basis for the suggestion that led up to its use, particularly the positive pole, in our series of cases. Its properties are briefly outlined

#### CHARACTERISTICS OF GALVANIC CURRENT

- |   |   |   |  |
|---|---|---|--|
| 1 | Unidirectional  |   |  |
| 2 | Voltage low 1.80 volts  |   |  |
| 3 | Amperage relatively high 1.500 M A average 1.40                           |   |  |
| 4 | Has electrolytic properties (ionization)                                  |   |  |
| 5 | Polarity distinct and important   |   |  |
|   | <i>Positive Pole</i>  |   | <i>Negative Pole</i>                                 |
| 1 | Oxygen pole   | 1 | Hydrogen pole  |
| 2 | Acid pole   | 2 | Alkaline   |
| 3 | Hemostatic  | 3 | Increases bleeding                                   |
| 4 | Sedative  | 4 | Produces hypersensitiveness                          |
| 5 | Hardens tissue (as trivalent)   | 5 | Liquifies and dissolves                              |
| 6 | Vaso constrictor  | 6 | Vasodilator (local)                                  |
| 7 | Will corrode metal  | 7 | Will not corrode metal                               |
| 8 | Acid caustic resulting cicatrix is hard and unyielding (following a burn) | 8 | Alkaline caustic resulting cicatrix soft and pliable |

Now it was reasonable to assume that if the anode (positive pole) could be successfully applied against the hypertrophic mucous membrane for any length of time, at repeated intervals something definite might be accomplished in the way of improving the treatment of this distressing malady, producing the good effects desired without the bad effects of destruction of excessive tissue with its various complications and ultimate deleterious results aforementioned.

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symptoms and signs, subjective and objective, as described by the patients and checked up by the results of repeated examinations during the course of treatment and observation, and later by interviews personally and by means of correspondence and communication over a period of approximately five years. Our conclusions were as follows: total number of cases treated 50, total number of treatments given 512, total number cured 28 (56%), total number improved 12, (24%), total number unimproved 10 (20%). Eighty per cent, therefore, were entirely cured or relieved. These figures seem almost unbelievable, but the facts and the cases stand out as their own evidence and proof, and were a revelation to us.

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INFLAMMATION INVOLVING THE ISLANDS OF LANGERHANS  
IN DIABETES

## A Report on Pathological Findings

BY OLIVER H STANSFIELD, M D, AND SHIELDS WARREN, M D \*

**O**CCASIONALLY one meets with cases of diabetes in children which run a severe and rapidly fatal course. Two such cases afford the material for the study reported here. Since neither case was recognized to be diabetes, until in the first case coma had developed, and in the second, until postmortem examination the pathologic features were largely unmodified by treatment. Both cases were observed in the Memorial Hospital, Worcester, Mass.

## CASE HISTORIES

**CASE 1** L. L., a white girl of six years, was admitted to the service of Dr C. A. Sparrow on August 2, 1926. The history referred back to June, 1926, when the patient was ill for a week with vomiting and constipation, and since which time she had wet the bed at night and had to urinate frequently during the day. Four days before admittance, she became restless and very sick, and for two days had a mild diarrhea. The night before admittance the child's breathing became heavy and she asked for air. The past history was one of good health except for measles and chickenpox. One grandmother, who died from cerebral apoplexy, was said to have had diabetes.

The positive findings brought out by physical examination were unconsciousness, soft eye-balls, hyperpnoea and pallor. The patient died a little over twelve hours after admission.

**Postmortem examination.** The brain is wet and swollen, without other abnormality. The thoracic contents, except for slight hypostatic congestion of the lungs, are not remarkable. The abdomen contains no free fluid. The kidneys are dark red, swollen, with blurred markings and bulging surfaces on section, the capsules strip easily. The pancreas is larger than usual and distinctly reddened throughout. Other organs are not remarkable.

**Microscopic examination.** Essentially negative except as noted below.

**Spleen.** Rare phagocytic mononuclear leukocytes in the lymph nodules and an increased number of polymorphonuclear leukocytes in the pulp.

**Liver.** Shows marked fatty infiltration with some lymphocytic and polymorphonuclear precipitate in filtration. Scattered nuclei show characteristic glycogenic vacuolization.

**Kidneys.** Show congestion and polymorphonuclear infiltration of the coronary tufts with precipitate serum and red blood cells in the capsular space. There are scattered adhesions between the glomeruli and the capsule. There is some edema of the tubules. There is slight glycogenic vacuolization of the epithelium of Henle's loops. Lymph nodules show a moderate degree of hyperplasia.

**Pancreas.** Normal number of islands. The acinar tissue is practically negative. At the periphery of the organ are scattered polymorphonuclear leukocytes and lymphocytes. A fair proportion of the islands show a moderate degree of lymphocytic infiltration both in the islands and immediately surrounding them, otherwise negative. Many of the island cells appear markedly vacuolated.

**CASE 2** M. B., a white girl of eleven years, was dead on arrival at the hospital, March 29, 1927. The history obtained told of an attack of vomiting followed by jaundice a month before death. The jaundice lasted about ten days and she became apparently well again. A few days after this recovery, however, marked thirst and increased appetite appeared. On March 24 pain in the stomach and vomiting recurred and grew worse. Since the evening of March 28 the patient had seemed asleep but could not be aroused. She was breathing heavily.

The child had received for some months milk from a single cow, which was attacked by garget (inflammation of the udder) a short time before the girl became jaundiced.

Before the final illness the patient had been subject to frequent attacks of vomiting, of unknown cause. She had also had scarlet fever, measles and occasional colds.

**Postmortem examination.** Shows the body of a thin, white girl, no external marks present. On section, very little, bright yellow subcutaneous fat is present. The peritoneal cavity is not remarkable, except for a distended bladder from which urine was collected. The liver is not noteworthy in color or consistence. The gall bladder seems normal. The pancreas is rather smaller than usual, but otherwise seems normal. The spleen and kidneys are negative. Except for firm pleural adhesions about the upper lobe of the right lung the thoracic organs are negative. Blood was taken from the heart, and found later to contain 0.512% sugar. The urine specimen taken contained sugar and diacetic acid.

**Microscopic examination.** Essentially negative except for a few nuclei in the liver which show glycogenic vacuolization and for the pancreas. There are scattered mononuclear leukocytes and very rarely polymorphonuclear leukocytes as well as a few lymphocytes scattered through the interlobular and interlobar connective tissue of the pancreas. The cytoplasm of the cells of the islands is vague in outline, not definitely vacuolated. The nuclei are pyknotic. There is moderate lymphocytic infiltration in and about a number of the islands. Occasionally large mononuclears are present. There is a slight increase in the connective tissue of the islands.

The pathology in both cases suggests a causal relationship between the inflammation in the pancreas and the diabetes, as the inflammation in Case 1 is strikingly localized in the island tissues, and the islands are involved in Case 2. Case 2 could not have been regarded as one of diabetes from pathologic study alone, but only with the aid of the clinical and laboratory findings. This is too often true for the pathologist to become complacent with regard to his ability in establishing a histologic diagnosis of diabetes. Whether the usual less acute type of diabetes, with a different pathologic picture in the pancreas at postmortem examination would have developed had these cases been recognized and given insulin, or whether the type of diabetes is peculiar in severity and pathology can-

not be said. Should cases be found showing gradations from the tissue reactions noted here to the usual changes of long-standing diabetes, the indication would be that the disease, in certain instances at least, had its origin from such inflammation as in these two instances

The occurrence of inflammation of the udder

in the cow used to produce milk for the second patient offers a very tempting datum point for pleasurable and possibly logical speculation, it is therefore not elaborated upon

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## AN UNUSUAL CASE OF SPONTANEOUS IDIOPATHIC HEMOPNEUMOTHORAX WITH CERTAIN FEATURES RESEMBLING AN ACUTE SURGICAL ABDOMEN

BY LEWIS M. HURXTHAL, M.D.\*†

**A**BDOMINAL pain and rigidity may be caused by extra abdominal lesions. The most frequent causes perhaps are pneumonia and acute pericarditis in children, and coronary occlusion in adults. Recently we have had an opportunity to observe in this clinic the above clinical picture in spontaneous hemopneumothorax. So real was the simulation of a surgical abdomen that exploration was seriously considered until full diagnostic procedures had been completed. Since this patient was almost submitted to a major operation in a critical condition, we feel that the case should be reported not only because of its rarity and unusual interest, but also that others may not be led astray as we were.

The patient was an American married and 29 years of age. He has always been well until two or three years before the present illness at which time he commenced having epigastric discomfort relieved by eating food or by taking soda. Fried foods particularly disagreed with him causing him distress 2 to 3 hours after taking them.

For the past few months he had not felt as well as usual having tired easily and having had frequent colds without cough or hemoptysis. There was no family history of tuberculosis or known association with the disease.

On June the 30th while attempting to unloosen the cushion seat of his automobile he experienced a sharp pain in his right shoulder. Shortly after the pain still persisting he went to bed and obtained some relief but began to have difficulty in breathing. A few hours later the patient attempted to drive his car home at which time he suffered increased pain and dyspnea. He gradually became pale and discomfort in the abdomen was noticed.

The patient was sent to the hospital where examination revealed a pale man lying quietly in bed but appearing quite sick. Perspiration stood out in beads on his forehead breathing was not labored. There was no noticeable cyanosis. The pulse was thready +120 per minute and the blood pressure 80/70. Anteriorly examination of the chest in the lying position showed the right side smaller and the respiratory movements less than on the left. There was hyperresonance on the right, with obliteration of the liver dullness. Breath sounds were absent on the right, but the spoken voice came through. The heart was displaced 3 cm. to the left. Breathing was exaggerated in the left chest. Posteriorly on the right side in the lying position there was shifting flatness with absence of breath sounds. No fremitus

The abdomen was rigid and painful on pressure, especially in the epigastrium and right upper quadrant. The rest of the physical examination was essentially negative. A diagnosis of pneumothorax was made and confirmed by x-rays one of which is shown in Plate I.



PLATE I

The patient was given a quarter of a grain of morphine and 750 cc. of normal saline intravenously. There was immediate improvement in the pulse and the blood pressure rose to 110/70 before the end of the injection. After another quarter grain dose of morphine had been administered the patient's general condition had so much improved and the abdomen had relaxed sufficiently to make one skeptical of anything surgically wrong in the abdomen. Operation was therefore decided against.

The next day a needle was inserted in the mid scapular line at the tenth interspace. A syringe full of apparently pure blood was withdrawn. A red count taken on this day was reported 3,200,000 hemoglobin 70% Talquist. White count 20,000. The following day a larger trocar was inserted at the same location and 2,400 cc. of venous like unclotted blood was aspirated. For each syringe of blood withdrawn

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an equal quantity of air was injected. As the patient began to cough, the procedure was stopped before all of the fluid had been withdrawn. The removal of the fluid gave the patient immediate relief from two symptoms: one, a dragging sensation in the right

accident, the patient was allowed to get up after ten days. On discharge the red count was reported 4,140,000, hemoglobin 75%, white count 14,000. Four months later the patient reported himself in good condition, although he had not yet returned to work.



Fig II

PLATE II

side of the abdomen, and, two, a shutting off of his breath while attempting to lie on his left side. (See Plate II for picture taken after this tapping.)

Eleven days from the onset of his illness, another liter of unclotted blood was removed, again an equal quantity of air being injected for the fluid withdrawn. This fluid showed a count of 3,700,000 RBC per cu

We have been unable to find reference to a similar case in the literature. Kransé and Heise<sup>1</sup> report a case of a man who, having rapidly progressing T.B. of the left lung, was given a partial collapse by the injection of 350 cc of nitrogen. Twenty-four hours later

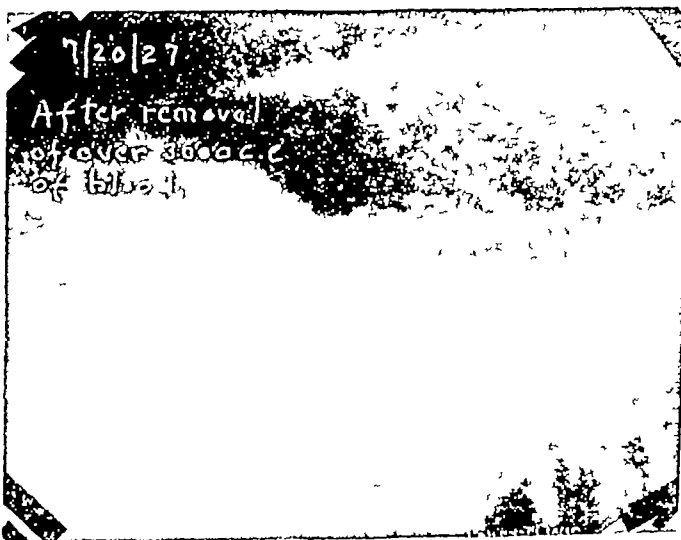


PLATE III

mm. X-rays taken on this day showed a small amount of fluid with the lung partially re-expanded. (See Plate III.) Sixteen days later the x-ray picture showed further expansion with no increase in the fluid.

There was no definite evidence of tuberculosis in the picture. (Report given by Dr. L. B. Morrison.) Since there had been no rise in temperature or pulse at any time since the first two or three days of his

the patient suddenly developed a complete pneumothorax on the affected side. 900 cc of air was withdrawn because of the positive pressure. The patient died soon after and autopsy revealed 2000 cc of clotted blood in the left pleural cavity. A torn adhesion was the only source of hemorrhage found.

Numerous cases of spontaneous pneumo

thorax are reported in the literature without definite evidence of tuberculosis or other lung disease such as emphysema or influenza. It seems likely that this may be such a case although this case is unique because of the extent of the hemorrhage, the simulation of a surgical abdomen and recovery. The intravenous administration of saline restored the blood volume immediately and probably aided the patient over the critical condition in which he was first seen.

## SUMMARY

A patient with spontaneous hemopneumothorax showed abdominal rigidity. There was a massive hemorrhage of from three to four liters of blood into the pleural cavity. The blood was aspirated and air reinjected. There was no definite evidence of tuberculosis. The patient recovered.

## REFERENCE

1 Krause, A. K. and Helse, F. H. American Review of Tuberculosis, Feb. 1920, Volume 3, 785.

## SPIROCHAETES AND FUSIFORM BACILLI IN THE SPUTUM\*

## Report of Examination of the Sputum in 178 Cases of Respiratory Disease

BY RICHARD B. KING, M.D., AND H. GLADYS DACEY, B.S.†

UNTIL quite recently the generally accepted view in regard to the acknowledged presence of spirochaetes and fusiform bacilli in the sputum of persons suffering from certain pulmonary diseases has been that these anaerobic organisms occur as secondary invaders. Within the past few years, however, there has been a gradual accumulation of evidence strongly suggesting that the spirochaete of the Vincent type and the fusiform bacillus are definite etiological factors in the production of certain pulmonary infections. There are now numerous reports in the literature of the almost constant presence of these organisms in the sputum of persons suffering from pulmonary abscess, chronic bronchiectasis and pulmonary gangrene, but one can find very little in the literature in support of the contention that these organisms are absent in the sputum from pulmonary conditions other than those just mentioned.

Smith<sup>1</sup> recently examined the sputum in 150 cases of uncomplicated pulmonary tuberculosis and in no case found spirochaetes or fusiform bacilli. He also reports their absence in the sputum of six cases of bronchial asthma and five cases of mycotic pulmonary infection. Thompson<sup>2</sup>, in examining the sputum of British soldiers invalided home from Salonica because they were considered malarial, found spirochaetes in 39 out of 79, with tubercle bacilli associated in two cases, these men all had cough, sputum and absent or insignificant chest signs. Unfortunately he was prevented from investigating the nature of the bronchial or pulmonary lesions in these cases. Sinclair<sup>3</sup> examined the sputum of 410 Filipino patients in a Honolulu tuberculosis sanatorium and found spirochaetes and fusiform bacilli present in 256. The purpose of his work was to show that when these organisms occurred in the tuberculous patient the tendency to hemorrhage was markedly increased. He gives no details in the report as to

the technique employed in the collection and examination of the sputum, and the presence or absence of tubercle bacilli is not noted in any case.

The present study was undertaken with the hope of reaching a conclusion as to whether or not these organisms are present in significant numbers in the suppurative, and absent or very scarce in the other pulmonary conditions with sufficient constancy to make a special search for them in all cases raising sputum desirable as a diagnostic procedure.

## METHOD

All patients brushed their teeth thoroughly and rinsed their mouths with antiseptic alkaline mouth wash, they then coughed, and the bronchial sputum thus obtained was prepared for staining according to the technique described by Smith<sup>1</sup>, except that the portion of sputum selected was washed in three changes of tap-water instead of five changes of saline. The central part of this washed bit of sputum was then spread in a very thin film on slides and stained with the Fontana silver-nitrate technique. Nearly all the specimens were stained within an hour of the time of their collection, and no specimen was used which had been standing for more than four hours. The silver-nitrate solution was made up freshly about once a week, and since there was no day on which spirochaetes were not demonstrated, it is certain that the stains were always sufficiently fresh. Only a few dark-field examinations were made, since it was felt that morphological studies were outside the scope of this report. Specimens obtained from 19 bronchoscopic examinations, five operations and three thoracenteses are included in this report. Since it is obvious that contamination of such material with mouth organisms is either very unlikely or impossible, the finding of spirochaetes and fusiform bacilli was of great importance. Every specimen was prepared, stained and examined by one of us personally, and the collection of

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the sputum by the nurses on the wards was supervised until they became thoroughly acquainted with the desired technique. A rough quantitative measure was adopted, consisting of counting the number of spirochaetes found in a five-minute examination of each specimen

were constantly found on repeated examinations. In several instances specimens were obtained which showed such enormous numbers of spirochaetes that a five-minute count was impossible, in such cases the number was estimated on the basis of the average number in each field, and

TABLE 1

DISEASE	NUMBER OF CASES	SPIR & FUSIL		% POS	AVE NO SPIR SEEN IN 5 MIN
		POS.	NEG.		
Pulmonary Abscess	38	36	2	94	218
Bronchopneumonia	27	6	21	22	3
Pulmonary Tuberculosis	23	6	17	26	2
Cough (no other signs)	18	5	13	28	28
Chronic Bronchiectasis	14	10	4	70	53
Intrinsic Bronchial Asthma	11	3	8	27	9
Chronic Empyema	10	2	8	20	9
Lobar Pneumonia	9	2	7	22	2
Unclassified Bronchial Asthma	5	2	3	40	1
Chronic Passive Congestion	4	0	4	0	0
Acute Bronchitis	3	0	3	0	0
Extrinsic Bronchial Asthma	2	2	0	100	7
Mediastinal Tumor	2	0	2	0	0
Pleurisy with Effusion	2	2	0	100	5
Pleurisy without Effusion	1	0	1	0	0
Chronic Bronchitis	1	0	1	0	0
Broncho-pulmonary Cancer	1	0	1	0	0
Pneumoconiosis	1	0	1	0	0
Pulmonary Infarction	1	0	1	0	0
Questionable Diagnosis *	5	3	2	60	8

TOTAL = 178

\*See details in discussion of results

Since the same observers prepared and examined all the smears, such an approximation was felt to be significant, despite the wide range of error possible. The sources of error consisted in the character of the sputum, the portion selected for examination, the thickness of the preparation, and the speed with which the examination was made. While a specimen was reported "positive" if only a single spirochaete was found despite further negative examinations, such a specimen is very different from another "positive" in which large numbers of spirochaetes

the number of fields encountered in the usual five-minute search. In some of the earlier cases of the series quantitative estimations were not made, the reports being merely "positive" or "negative." Over 500 preparations from 178 different cases were examined.

## RESULTS

With the exception of a few private patients of members of the Staff, and several internes and nurses, the cases were studied in the wards of the general services, every patient having at

his disposal the diagnostic facilities of the hospital, including special laboratory tests, fluoroscopy, roentgenography, bronchoscopy and operation. A large majority of the cases were in the hospital during the first half of the year 1927.

Table I illustrates the various types of pulmonary disease studied, with the results of the sputum examinations for spirochaetes. Table II gathers these cases into broad groups. It will be seen that of 52 cases of chronic broncho-pulmonary suppuration, (including both pulmonary abscess and chronic bronchiectasis), 46 or 88% showed spirochaetes and fusiform bacilli. On

which the evidence was divided between pulmonary abscess and malignant disease, while in a third case presenting similar signs and symptoms they were absent. In a fourth case a decision could not be made between a pulmonary abscess and chronic bronchiectasis, in the presence of a complicating bronchopneumonia, and in this case the sputum repeatedly showed enormous numbers of spirochaetes and fusiform bacilli. In the final case the diagnosis rested between encapsulated empyema and intra-pulmonary disease, the sputum being negative for spirochaetes and fusiform bacilli.

Table III shows the result of quantitative esti-

TABLE 11

TYPE OF DISEASE	NUMBER OF CASES	SPIR & FUSIL		REMARKS
		POS.	NEG.	
Chronic Broncho-pulmonary Suppurative Disease	52	88	12	Includes pulmonary abscess and chronic bronchiectasis.
Chronic Broncho-pulmonary Non-suppurative Disease	44	28	72	Includes tuberculosis, asthma, bronchitis, pneumoconiosis, cancer, mediastinal tumors.
Acute Broncho-pulmonary Non-suppurative Disease	40	20	80	Includes pneumonia, bronchitis, and pulmonary infarction.
Pleural Infection Acute and Chronic	13	31	69	Includes empyema, pleurisy with and without effusion.
Cough (no other signs)	18	28	72	No demonstrable pulmonary pathology

the other hand, in 44 cases of non-suppurative chronic broncho-pulmonary disease, (including tuberculosis, bronchial asthma, chronic bronchitis, malignancy of the lung, pneumoconiosis and mediastinal tumors), only 13 or 28% showed these organisms. In 40 cases of acute broncho-pulmonary disease, (including bronchopneumonia, lobar pneumonia, acute bronchitis and pulmonary infarction), spirochaetes and fusiform bacilli were present in eight cases, or 20%. In the 13 patients with pleural infection who were raising sputum 4 or 30% showed these organisms. In a group of 18 persons who were coughing and raising sputum without other pulmonary signs or symptoms, spirochaetes and fusiform bacilli were repeatedly found in the sputum of five, or 28%. In four patients suffering from chronic passive congestion of the lungs secondary to myocardial insufficiency the sputum failed to show these organisms at any time.

There were five cases in the series in which no definite diagnosis was made, in the first the sputum showed spirochaetes and fusiform bacilli, and the differential diagnosis included tuberculosis, pneumoconiosis, malignant disease and actinomycosis. These organisms were repeatedly found in the sputum of another case in

mation of the spirochaetes found. The rough method used has been described. It will be seen that the average number of spirochaetes found in each five-minute examination of smears from the sputum of 22 patients with pulmonary abscess or chronic bronchiectasis is 177, while in 100 non-suppurative cases the average was only 11. The greatest number of spirochaetes was estimated, in a case of pulmonary abscess, to be 2250, while in the non-suppurative group a case of bronchial asthma showed 45. There were several cases in both groups which showed only one spirochaete.

#### DISCUSSION

There would seem to be four main possible sources of error in a study of this kind: 1) contamination of the sputum with mouth organisms, 2) an insufficient number of examinations of each specimen reported, 3) faulty clinical diagnosis, and 4) faulty staining or improper recognition of the organisms.

The method used to prevent mouth contamination is described elsewhere, it is striking that in the material examined which had been obtained by suction at the time of the 19 bronchoscopies there were only two specimens that were negative for spirochaetes, when the sputum examina-

tion had been positive. In the other 17 cases both reports were in agreement. Five pulmonary abscesses were operated upon, and the material thus obtained directly from the lung showed spirochaetes and fusiform bacilli in every case. They were also present in the pleural exudate of a patient who had a pulmonary abscess rupture into the pleural cavity, and they were constantly absent in material ob-

CONCLUSIONS

1 Spirochaetes and fusiform bacilli are not only present, but present in relatively great numbers in the sputum of a large proportion of patients with chronic broncho-pulmonary suppuration, and are either absent or present in only small numbers in patients with non suppurative diseases of the lungs and bronchi.

TABLE III

DISEASE	NUMBER OF POSITIVE CASES	NUMBER OF SPIROCHAETES FOUND IN FIVE MINUTES EXAMINATION			
		AVERAGE	HIGHEST	LOWEST	
Pulmonary Abscess and Chronic Bronchiectasis	22	177	2250	1	
All Other Conditions in which Counts were Made	100	11	45	1	

tained from the draining sinuses of patients with chronic empyema following pneumonia. Thus it is clear, in these cases at least, that the spirochaete and fusiform bacillus were present in the pulmonary tissue itself.

The objection that some of the "negative" reports might have become "positive" with further examinations cannot be disregarded, but in several cases in which six or more different examinations of the sputum were made this situation failed to arise. As regards the accuracy of the final clinical diagnosis, one can only say that this was arrived at in each case only after thorough investigation with the available diagnostic measures of the hospital. Possible errors through faulty staining or improper recognition of the organisms would seem to have been minimized to the point of nearly complete disregard.

2 These facts seem to the writers to justify the recommendation of search for these organisms as a diagnostic procedure in broncho-pulmonary disease. An estimate of the relative number of organisms, however, is more important than their mere presence or absence.

3 The present methods of estimating numbers are crude, but even so reasonably satisfactory, and the writers believe that the finding of as many as one spirochaete in every other oil immersion field in thin preparations is very suggestive of a suppurative type of disease.

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2 Thompson, J. A. Spirochaetes in the Sputum. *Brit. M. J.* 2:709 1918.  
3 Sinclair, A. N. Vincent's Spirochaetes and Hemorrhage in Tuberculosis. *Amer. Rev. Tuberc.* 4:201 1920.

# Case Records of the Massachusetts General Hospital

ANTE MORTEM AND POST MORTEM RECORDS AS USED IN  
WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY R C CABOT, M.D  
F M PAINTER, A.B., ASSISTANT EDITOR

CASE 14131

## A QUESTION OF UREMIA

### MEDICAL DEPARTMENT

A married Italian woman forty-two years old came February 26 to the Emergency Ward, where she was thought to be uremic

For two weeks she had had headache and dimness of vision

Her family history is unimportant She had had eleven children All but two had died Her husband denied venereal disease His pupils reacted slightly

The only past history obtained was that she was in bed for ten days with slight fever two summers before admission

Clinical examination showed a well nourished woman No rigidity of the neck Transient internal strabismus of both eyes Right eye slightly more prominent than left, with redness of the conjunctiva Slight ptosis of left lid Left side of face moved less than right Smoothing out of lines on that side Many small bilaterally enlarged cervical glands Apex impulse of the heart not seen, barely felt in the fifth space in the nipple line, 11 centimeters from midsternum, corresponding with the left border of dullness Right border of dullness 4 centimeters from midsternum Rhythm slightly irregular Sounds of poor quality A systolic murmur at the apex, transmitted to the axilla Aortic second sound accentuated Pulses synchronous, equal, irregular, small volume and high tension Artery walls not felt Systolic blood pressure 120 Lungs, abdomen and pupils normal Right knee jerks present but slight Left knee jerk not obtained Plantar reflexes normal

Amount of urine not recorded, urine cloudy, specific gravity 1.029, a trace of albumin, rare hyaline casts and much pus in the single examination Hemoglobin 80 per cent Slight poikilocytosis, otherwise blood smear normal Leukocytes not recorded

Temperature 97.4° to 100.4°, pulse 120 to 61, respirations normal

The patient was very noisy and entirely unreasonable She complained of constant headache February 28 there was nothing new on physical examination except possibly a little rigidity of the neck A lumbar puncture done

that day gave about 40 cubic centimeters of cloudy pinkish fluid under considerable pressure In the counting chamber only red cells were seen On centrifugalization red sediment was thrown down leaving a clear colorless supernatant fluid Smear showed red cells, rare mononuclears and very rare polynuclears No bacteria seen Culture no growth March 1 a second lumbar puncture was done and similar fluid was obtained A neurological consultant found paresis of one or more of the ocular nerves and noted that the patient did not use the right side of her mouth well He obtained no knee-jerks She refused to do or say anything at his examination A consulting oculist found the right eye slightly prominent He was unable to make out any limitation of motion The left eye showed convergence at times Both fundi were normal

The patient continued to complain a great deal of headache She lay in stupor and suddenly cried out March 2 she died

### DISCUSSION

By RICHARD C CABOT, M.D

#### NOTES ON THE HISTORY

We should like to know whether her husband's pupils reacted to light or accommodation We cannot say much otherwise

#### NOTES ON THE PHYSICAL EXAMINATION

The pulse tension was not high In the old days we thought we were very skilful with our fingers, had the "tactus eruditus", the educated touch, but when we came to compare our guesses with the true measurements we found ourselves often very wrong

We have not much evidence against that heart so far as I can see We do not know that it is enlarged We have the systolic murmur that we get in so many conditions without heart disease I cannot say anything in particular on the basis of those facts

They do not say anything about the muscular condition outside the face

I do not see how we can say uremia on the basis of that urine

40 cubic centimeters of spinal fluid is a great deal 10 to 15 is what we get usually

#### DIFFERENTIAL DIAGNOSIS

This is a blind case We have to say brain disease, but what disease? This is not the lumbar fluid of meningitis If the report is right she has not meningitis It is consistent with brain tumor or with cerebral hemorrhage The normal fundi are strongly against tumor that is strongly against death from tumor If it is cerebral hemorrhage where is it? I do not know The little that we have seems to point



to the right side of the brain, but not strongly "Hemorrhage" means some vascular lesion. We always ought to say that Embolism, thrombosis or softening would give the same evidence. It is just as likely that this is softening as that it is hemorrhage. The presence of blood in the spinal fluid is the most troublesome thing. That seems more like hemorrhage than anything else. I should say cerebral hemorrhage, and I suppose it is on the right side of the brain. It might be in the ventricle or in the base.

A STUDENT What about lues?

DR CABOT I think it is quite possible that lues is behind the picture. There is no conclusive evidence. Lues can go very well with the poorly reacting pupils. The condition of the knee jerks in a person in her state does not mean anything.

A STUDENT What about cranial nerve paralysis?

DR CABOT We have no good evidence of cranial nerve paralysis. It was suspected by one person. The mental symptoms are not characteristic. I do not know enough about the date of this case to know that it was not before the day of encephalitis. But I do not believe there was any encephalitis at that time. That is of course not quite a fair argument on the basis of the clinical facts.

A STUDENT What do you think of the increased pressure?

DR CABOT We get increased pressure in cerebral hemorrhage or edema, sometimes in tumor, and sometimes with meningitis, especially "serous" meningitis.

DR TRACY B MALLORY Did you make anything of the conjunctiva and convergence of the right eye, Dr Cabot?

DR CABOT I suppose I ought to, but I do not know what.

A STUDENT Nine children out of eleven are dead.

DR CABOT That makes one think of syphilis, but it does not prove it. There are many other causes for the deaths of young children.

A STUDENT Are there not enough cells for meningitis?

DR CABOT We ought to find more white cells.

#### CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Cerebral syphilis?  
Brain tumor?

#### DR RICHARD C CABOT'S DIAGNOSIS

Hemorrhage into the right side of the brain

#### ANATOMIC DIAGNOSES

#### 1 Primary fatal lesions

Thrombosis of the great venous sinuses of the cranium and of certain radicles of the superior longitudinal sinus and of the

first portion of the right ophthalmic vein and the first portions of the jugular veins

#### 2 Secondary or terminal lesions

Infarcts of the left lung

Edema of the scalp

Small hemorrhagic areas in the right cerebral and right cerebral hemispheres

Hyperplasia of the spleen

Infarct of the spleen

DR MALLORY From the anatomic findings it is very difficult to believe that there was not more variety in the symptoms which the patient presented. The chief finding was thrombosis of the right cavernous sinus extending backward through the longitudinal to both jugular sinuses down the right jugular vein. From the inferior end of that thrombus an embolus split off, causing numerous pulmonary infarcts and also an infarct of the spleen. There were no other findings of any note. Nothing was discovered to suggest syphilis at all. The only culture made was from the spleen, unfortunately not from the thrombus mass, and it showed no growth.

DR CABOT Is there nothing to show what made this thrombosis occur?

DR MALLORY I suspect that there must have been infection of the right orbit, although the orbit plate was not removed, so that we have no definite proof of that. The ethmoidal and frontal sinuses were negative, ruling out the other ordinary sources of cavernous sinus thrombosis.

#### CASE 14132

#### LUPUS ERYTHEMATOSUS TREATED WITH GOLD SODIUM THIOSULPHATE

#### DERMATOLOGICAL DEPARTMENT

An unmarried American dry goods saleswoman twenty seven years old entered December 27 complaining of an itching encrusted eruption of three months' duration.

In September she had tonsillectomy for a typical butterfly eruption of lupus erythematosus over the nose of five years' duration, with much improvement of the eruption. Between October 6 and December 15 inclusive she had ten weekly intravenous injections of gold sodium thiosulphate of 50 to 75 milligrams each. The butterfly eruption continued to improve. Soon afterwards however a vesicular itching eruption appeared on her neck, which by December 1 presented a mass of crusts on a bright red base and was oozing serum. During two weeks of coal tar treatment\* this lesion improved slightly. During the next three weeks there was improvement. December 22 there was a generalized eruption on the arms and trunk and the lesions on the neck and left arm were worse. She could

Crud coal tar 20 zinc ointment 0 vasoline 300

give no history of exposure to any new or unusual substance

Her mother died of pulmonary tuberculosis

The patient's past history shows nothing of significance. At twenty-two she weighed 128 pounds, her best weight, in July, six months before admission, she weighed 106, she now weighed 111

Clinical examination showed a fairly well nourished young woman. The whole skin area above the knees was red and extremely dry. Almost every follicle was raised and hard, so that the skin felt like a coarse file. There was an irregular distribution of light brown crusted patches from half an inch to five inches in diameter, with no redness or inflammation at the edges. The extensor surfaces of the arms were largely covered with crusted lesions, the rest of the skin of the arms and hands with the follicular rash. There was nothing below the knees. There were no small excoriations. There was very slight pitting edema of the legs just above the ankles and swelling without demonstrable pitting of the arms. One breast showed a scar for "removal of a small tumor." The cervical, axillary and inguinal glands were enlarged. There was another scar in the right lower quadrant. The rest of the examination was negative.

Urine not remarkable except for a colon bacillus infection January 24 to 27 with leukocytes, clearing up by January 31. Urine negative for arsenic. Blood at entrance 7,600 leukocytes, 54 per cent polymorphonuclears, hemoglobin 70 per cent, reds 4,675,000, slight achromia. Wassermann negative. Blood sugar 86 milligrams.

X-ray examination of the chest December 29 was essentially negative. The sinuses and teeth were negative.

The itching was controlled by a wash of zinc oxide, lime water and glycerine. The edema of the arms and legs increased.

A history was obtained of the use of a proprietary tonic called "Vinol" which figured nine years ago in a case for fraudulent advertising and was found to contain sherry wine with phosphates, carbonates and glycerosulphates of magnesium, ammonium, etc., as well as sodium chloride.

Beginning January 5 the legs were swollen. January 7 the patient was seen by Dr. Burnett, who thought she was seriously undernourished because of rapid intestinal rate. Bird seeds given at supper appeared in the stool in the morning.

The morning of January 9 the patient felt well and the swelling of the legs was less. Upon return from X-ray examination she had a chill with a temperature of 102.2° and a rise in leukocyte count. In the afternoon her temperature was 105.4° and she had severe pain in the right ankle upon pressure of the bone. There had

been no trauma. Surgical consultants believed the condition to be a cellulitis and not an osteomyelitis. For five days she had occasional cough with a little white sputum. Her pulse was rapid. She had headache and malaise. No localizing signs were found except the ankle. X-ray examination was negative except for considerable thickening of the soft tissues about the ankle joint. January 12 there was a small area of extravasated blood just behind the external malleolus and a bleb over this area filled with serum. By January 16 the swelling was practically gone. There was an area of superficial slough where the blister had been. The skin condition was much improved. New areas of dermatitis appeared on the arms and back which dried quickly with zinc oxide wash\*\*. An indolent ulcer formed below the malleolus, culture from which on January 19 showed staphylococcus aureus and streptococcus hemolyticus. Another culture February 23 was sterile. Alpine lamp treatment of the ulcer was begun January 20 and continued for a month. The general condition improved. The ulcer filled up slowly. By advice of a surgical consultant skin grafts were applied February 25 to avoid a thin scar over the malleolus. March 8 the patient was discharged almost well.

#### DISCUSSION

BY ARTHUR M. GREENWOOD, M.D.

There was no history of exposure to any new or unusual substance.

The physical examination describes a generalized dermatitis which would fit in with a general exfoliative dermatitis.

The blood is not remarkable, the blood sugar normal.

The history of the use of a proprietary tonic presumably had nothing to do with this case. There is nothing in it which would affect the present condition. The edema and adenitis are not uncommon in generalized exfoliating processes.

X-ray examination was negative so far as the bone was concerned.

The original diagnosis is not in question in this case. We have a case of lupus erythematosus, then, which was treated by a new method. This treatment was followed by or at least was coincident with the outbreak of generalized dermatitis, quite severe, and this in turn at its close was followed by a localized infection and an ulcer. The interest in this case I think centers in the use of gold sodium thiosulphate. This was first experimented with in Europe in 1922. It was used in this country in 1927 in Philadelphia, and in our clinic here in the spring of 1927. Gold had been experimented with in the

\* Zinc oxide 5 ii calamin 5 i glycerin 5 ii phenol minims xx water to make 3 viii

treatment of tuberculosis abroad for some time, and I presume it was taken up in lupus erythematosus on the basis that that was a tuberculous disease, which it probably is not. However, the use of gold sodium thiosulphate for this disease, which is a very intractable one, for which we have been able to do very little, has been quite successful. We have been able markedly to improve or cure sixty to seventy per cent of our cases, which is a much better rate than we have had with any other means of treatment.

There are several things to consider in the use of this gold salt. It is open to the objection of all the heavy metals given intravenously. It may be followed by general dermatitis, it may give rise to albuminuria, its injection may cause temporary malaise immediately after the injection. None of the cases here have had any serious results. I think that it is fair to assume in this case that the general dermatitis was caused probably by the gold sodium thiosulphate. We found no other cause. The appearance was not unlike that of arsenical dermatitis.

It is of interest to note that she had had presumably infected tonsils. At least she had had them out. That is a procedure that we always follow in cases of lupus erythematosus,—locate every focus and try to eliminate it for two reasons: (1) that quite a number of lupus cases clear up on removal of a focal infection, (2) that with the use of any heavy metal injection it is wise to eliminate any focus of infection or any intercurrent infection, both of which predispose to generalized dermatitis.

The dosage of this gold salt is as follows: we begin with weekly injections intravenously of twenty five milligrams dissolved in two cubic centimeters of sterile distilled water, increasing to 100 milligrams once a week. In some other clinics it has been given in higher dosages and more frequently. We have not had commensurate advantages with the higher dosages. The number of injections may be continued to thirty or forty, with improvement or cure at the end of that time. Most of our cases have improved very markedly with fifteen or twenty injections.

The final focal infection with the ulceration and the localization of the infection at the ankle is also not an uncommon accompaniment of a generalized dermatitis. We often see infection through some of the open, oozing areas with either a generalized blood infection or a localized

process like this. This is not infrequently seen in infantile eczema with serious results. The child becomes infected from an open or oozing spot on the skin and gets a general infection or localized abscess.

The question about the nourishment of the case when she was seen by Dr. Burnett he will take up himself. He has done a good deal of work with our skin cases, investigating their intestinal rate and improving their general condition.

DR. FRANCIS BURNETT: In my research work on nutrition I find a good many patients with skin diseases show a deficient condition of the body. The deficiency is presumably due to the fact that the tissues are not constantly getting what they should from the food. The important factor to consider in nutrition is the intestinal rate, or the time an evening meal takes to pass through the digestive system, because, as Dr. Cannon says, digestion, absorption, and assimilation or nutrition of the tissues are nicely correlated. We have not, so far, any very definite indices of normal absorption. We have not a normal form of the feces, and the estimates made on the intestinal rate are very varied. But by making certain adjustments in a patient's mode of living and ways of eating it is possible to increase the absorption a good deal so that patients, and especially deficient patients, will gain in weight and get into a healthy condition, and under these circumstances the skin becomes healthy.

This patient, when I first saw her, was much under weight. At one time she weighed only 105, but when she came into the hospital she weighed 111 lbs. During the first weeks the intestinal rate was rapid. Seeds marking an evening meal were first apparent in the feces in fifteen hours and last seen in about sixty-three hours. That meant that plenty of nutritive material was going through her, but her body and her skin were not getting the products from her food necessary to get them built up and healthy. The principal factor preventing good absorption was eating too fast. Other minor factors corrected were the proportions of her food. By correcting these erroneous ways of eating for a few weeks, her nutrition was improved. At this time the intestinal rate had changed to twenty six and about one hundred and ten hours. She had also gained a few pounds. Then at the time she left the hospital

she had gained six pounds and her skin was practically normal

DR CABOT Are there any other metals besides arsenic, bismuth, and gold known to cause a dermatitis?

DR GREENWOOD Mercurv

DR CABOT Has anybody traced the connection between the ingestion of the metal and the peeling of the skin?

DR GREENWOOD Presumably it is thrown off through the skin although it is impossible to demonstrate arsenic in the skin in acute cases. In the chronic cases, when they have taken arsenic for a long time, it is possible to find it in the skin

DR CABOT The theory is that it is an attempt to excrete the poison?

DR GREENWOOD Yes

MISS PAINTER How often is gold sodium thiosulphate therapy followed by permanent yellow pigmentation of the skin?

DR GREENWOOD In gold sodium thiosulphate there have been one or two cases noticed and not yet reported in which there has been a permanent yellowish discoloration of the skin. From all these points I think the use of gold sodium thiosulphate should be gone ahead with very slowly

DR CABOT Are there other cases in which you use it except the erythemas?

DR GREENWOOD It has been used in lupus vulgaris and psoriasis

#### DIAGNOSIS

Lupus erythematosus

Dermatitis exfoliativa

# The New England Journal of Medicine

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The system described seems antique and barbarous, even impossible in these enlightened days, and adequate to account for almost any amount of disqualification later, on the part of the physician, for the practice of obstetrics. The question is not whether the student is or is not told what is good obstetrics, but, is he taught by example as well as by precept how to deal with the obstetrical conditions he is most likely to meet? Apparently he is not. It is true that Experience is the best teacher, but her tuition charges in morbidity and mortality.

are high, and they can be and should be lowered by adequate supervision. So-called "spoon-feeding" of students may be objectionable, but it is less objectionable than ill advised obstetrics, even if a choice has to be made. The system is almost too absurd to be true but it prevailed in this and other communities twenty-five years ago. In some progressive communities it is now no longer employed in others it has never been tolerated. What is the situation in Boston now?

The verisimilitude of the picture is so convincing in other respects that this unwitting indictment seems very strong, and a public disclaimer on behalf of the two institutions specified in the indictment would bring a welcome relief to many who have read the "Extern," with misgivings which their amusement has not been able to allay.

### Headquarters for The Massachusetts Medical Society

THE statement by Dr. Birnie in the JOURNAL of last week and the letter from Dr. Bartol in today's issue in reference to the Boston Medical Library should hearten those who look forward to a closer union and greater activity of the Library and the State Society.

The Massachusetts Medical Society is in the midst of a campaign to raise \$125,000 for a fund to secure and maintain adequate quarters for the JOURNAL and for its other activities. The Library looks with favor on the plan and hopes the two organizations may work together. The Library will during this year launch an undertaking to raise funds for the more adequate quarters it sorely needs.

It is now certain that there can be nothing but coöperation. There will be no rivalry, no duplication of effort. Funds raised now for the Society will by that amount decrease the funds which must be raised for the Library later. The Fellows of the Society throughout the State are responding well to the requests made. If every man gives what he feels able and inclined to give the funds will be in the hands of the treasurer before the Annual Meeting in Worcester on June 5. All contributions should be sent to Dr. Arthur K. Stone, Treasurer, Framingham Centre Mass.

### MONUMENTS OF NEGLECT

UNDER the title "Monuments of Neglect Cross-Eyed Children Grown Up" W. W. Lewis, M.D. of Saint Paul, has contributed an important article to the *News Letter* of the National Society for the Prevention of Blindness.

Children of one year of age the author claims are perfectly safe with glasses, and take most

kindly and readily to them. "And it is at this very early age that the most startling and almost miraculous results in relieving squint so frequently take place. At this age, indeed, it may be only a matter of weeks or even days in getting the desired result, where a few years later it may mean many months or years and perhaps surgery in addition."

Retinoscopy, refraction and correcting glasses for infants was first advocated a number of years ago by Claude Worth of London, and despite the scepticism with which his views were received at the time his judgment has since been vindicated.

The essential provisions for the correction of squint are now recognized to be the following:

1. Preservation of visual acuity in the turning eye, which begins to be lost the moment the eye turns.
2. The development of fusion of the images from the retinæ of the two eyes into one image in the brain, which results in binocular single vision, and
3. The relief of over-stimulation of convergence, a result of excessive accommodation.

It has generally been considered until recent years that squint was a result of unequal length or strength of the extrinsic eye muscles, or as a result of anatomical irregularities. According to the more modern conception, however, crossed eyes are the result of a discrepancy or inequality in the required accommodation and the convergence. The excessive accommodation leads to over-convergence in the infant before the fusion function is sufficiently developed to check it by firm binocular fixation.

### THERE ARE SEVERAL VARIETIES OF FOOLS

THE worthy State Commissioner of Health of Massachusetts has stimulated the animosity of the Mayor of a large city in Massachusetts with respect to the control of rabies.

The said mayor follows the plan of procedure advised by a prominent lawyer some years ago to the effect that when one has a poor case, abuse the other fellow and in his statements as reported in the daily papers advises doctors to bite each other if they wish to perpetuate rabies.

There are people who are psychologically mad but not scientifically rabid. We fear that the mayor referred to may develop some incurable delusions if he does not desist from the exciting efforts of extravagant invective. We haven't the honor of his acquaintance but since he is popular enough to secure an election it may be fair to hope that he may become a very good executive if he will let rabies alone.

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If the patient is bleeding actively at entrance, shave the vulva and complete the vaginal preparation on delivery table with it in the shock position. Take the blood pressure every ten minutes. Do a hemoglobin and a red count. Take the temperature and pulse, and chart the pulse every five minutes. Type and match the blood for a transfusion. Prepare an operative set-up with large sizes of Vorhees bags. Have a transfusion set boiled. A germ-glucose apparatus should be ready.

If the patient cannot be moved to a hospital, either on account of distance or her desperate condition, as much of the above hospital equipment should be brought to her as possible. It is important not to waste time or blood.

If the patient is in good condition and more time is available, members of the family may be typed and matched as possible blood donors. Having the instruments, bags and packing ready to check any profuse hemorrhage, the patient is examined under anaesthesia (gas). If the suspicion is confirmed, the patient should be delivered as soon as possible, except in rare instances, and the method chosen should depend upon the condition of the cervix, parity and type of praevia.

Accouchement forcé (forcible dilatation and extraction) is to be condemned.

Braxton Hicks Version and the Vorhees bag are the methods of choice in the majority of cases. Caesarean Section is the method of choice in the case where the cervix is not taken up or is rigid. Vaginal Caesarean is rarely indicated.

There is a real danger in doing a transfusion with the patient under an anaesthetic and the blood should be given before or after recovery from anaesthesia. Blood pressure readings at frequent intervals are of value. The important principle in treatment is to deliver the patient with as little shock and bleeding as possible.

Hemorrhage, sepsis, ruptured uteri and shock are the principal causes of death.

Questions of a similar nature to the foregoing will be discussed in the JOURNAL each week. They may be addressed to the Clerk of the Committee, in care of the JOURNAL and will be answered by members of the Committee of the Section of Obstetrics and Gynecology.

### BOSTON MEDICAL LIBRARY

THE year 1928 marks an important milestone in the progress of dental science, all the more important because the older it grows the more intimate its relations seem to be with the medical profession. Indeed when measured by the trends in both professions there would seem to be more and more reason for the recent tendencies, manifested in educational fields for shaping the course of training leading up to the dental degree along strictly medical lines up to

the point where the special technique requisite for dental practice may most appropriately be commenced. In other words there is every reason for one who would most effectively prepare for the practice of dentistry to possess himself of a medical degree after which he should devote such time as may be necessary to prepare himself for his specialty, just as he would for ophthalmology, otology or anything else. The modern conception of the importance of caring for the teeth is receiving emphasis from various angles, many of which are from the point of view of public health as well as personal comfort, appearance and well-being. In industry, in school, in social work, in public service as well as in the home attention is being drawn to its importance as a factor in many problems heretofore regarded as purely medical. Apparently the father of this as a real science was Pierre Fauchard who published, 200 years ago, the first important dental textbook "Le Chirurgien Dentiste". Nearly 200 years before this however, in 1548, the first dental book had been written by Walter H. Ryff, in Germany. The Academy of Medicine in New York in February 1928, staged an exhibit of dental publications covering the history of the development of the profession. From the announcement of that is here quoted the list of works on exhibition.

"1 Our first knowledge of medicine and of the dental art was derived from stone pillars. Examples—(a) Code of Hammurabi sculptured 2000 B C. (b) Babylonian tablet. Then from various papyri. (c) Papyrus Ebers, c 1500 B C.

2 Dentistry's debt to medicine—the period prior to 1500 A D, the earliest printed medical books known as "Incunabula". A few will be shown to represent the two hundred odd medical writers that laid the ground work for all our early dental material prior to the time of Fauchard.

3 An example of this debt—Eustachius—"Libellus de dentibus" 1563, utilized those works to write the first dental anatomy and histology. Actuarius (c 1280), Aretaeus (270 B C), Aristotle (384-322 B C), Celsus (25 B C-50 A D), Cicero (106-4 B D), Erasistratus (300-245 B C), Fallopius (1523-62), Galen (130-200), Hippocrates (360-377 B C), Meletius (c 700 B C), Pliny (27-79), Ryff (1500-62), Vesalius (1514-64), Arculanus (—1484).

4 First dental book published, written for the laity and not profession. Series of twelve editions of Zene Artzner's of which we have a record as having been published between 1530 and 1576. Grouped with the original works of Avicenna, Celsus, Galen, Mesue Pliny and Vigo from which works the anonymous author (Meister Lorentz?) obtained his material.

5 Series of "Firsts" in various countries. (a) Germany, 1548, Ryff, W. H. "Nützlicher bericht wie man den Mundt, die Zan". "First to be published for the profession. (b) Spain, 1557, Martinez, Fr., "Cologvrio Breve Y copedioso". (c) Italy, 1563, Eustachius,



## THIS WEEK'S ISSUE

CONTAINS articles by the following named authors

BARNEY, J DELLINGER A B, M D Harvard Medical School, 1904 F A C S Chief of Service, Urological Department, Massachusetts General Hospital, Assistant Professor, Genito-Urinary Surgery, Harvard Medical School, Consulting Urologist, Salem Hospital, Waltham Hospital, Cable Hospital, Ipswich, Gale Hospital, Haverhill, United States Marine Hospital, Chelsea, Massachusetts Eye & Ear Infirmary, Hunt Memorial Hospital, Danvers and Peterboro Hospital, Peterboro, New Hampshire His subject is "Conservatism in Renal Surgery" Page 661 Address 87 Marlboro Street, Boston

VIETS, HENRY R B S, M D Harvard Medical School, 1916 Instructor in Neurology, Harvard Medical School, Assistant Neurologist, Massachusetts General Hospital, Visiting Neurologist, Long Island Hospital His subject is "Two New Signs Suggestive of Cauda Equina Tumor Root Pain on Jugular Compression and Shifting of the Lipiodol Shadow on Change of Posture" Page 671 Address 6 Commonwealth Avenue, Boston

CLIFFORD, RANDALL A B, M D Harvard Medical School, 1917 Assistant in Medicine, Harvard Medical School, Physician in Charge of Pulmonary Clinic, Massachusetts General Hospital, Consulting Physician, Massachusetts Eye & Ear Infirmary, Lung Consultant at the Boston Lying in Hospital, Visiting Physician, Channing Home, Secretary of Trudeau Society of Boston His subject is "Aneurysmal Phthisis" Page 674 Address 475 Commonwealth Avenue, Boston

KAHN, MORRIS H A M, M D Cornell University Medical College 1909 Chief, Department of Cardiovascular Diseases, Beth Israel Hospital His subject is "The Classification of Asthma" Page 676 Address 140 West 69th Street, New York City

BROWN, CHARLES L B S, M D University of Oklahoma, 1921 Junior Associate in Medicine, Peter Bent Brigham Hospital, Instructor in Medicine, Harvard Medical School Address Peter Bent Brigham Hospital, Boston Associated with him is

GRABFIELD, G P A B, M D Harvard Medical School, 1915 Associate in Medicine, Peter Bent Brigham Hospital, Instructor in Pharmacology, Harvard Medical School Address 23 Bay State Road, Boston Their subject is "The Relation of Acute Respiratory Infections to Atmospheric Conditions" Page 679

FELDMAN, LOUIS M D, Tufts College Medical School, 1919 Post Graduate Training Department of Physical Therapeutics, Boston City

Hospital. Obstetric House Officer, Jewish Maternity Clinic, 1918, House Officer, Massachusetts Homeopathic Hospital 1919-20 His subject is "A Rational Treatment of Hypertrophic Rhinitis" Page 682 Address 366 Commonwealth Avenue, Boston

STANSFIELD, OLIVER H M D University of Pennsylvania, 1912 Senior Physician, Memorial Hospital, Worcester, Consulting Physician, Fairlawn Hospital and Louis Pasteur Hospital Address 36 Pleasant Street, Worcester, Mass Associated with him is

WARREN, SHIELDS A B, M D Harvard Medical School, 1923 Pathologist, New England Deaconess and Palmer Memorial Hospitals, Instructor in Pathology, Harvard Medical School Address 195 Pilgrim Road, Boston. Their subject is "Inflammation Involving the Islands of Langerhans in Diabetes A Report of Pathological Findings" Page 686

HURXTHAL, LEWIS M M D Harvard Medical School, 1923 In Charge of Medicine, Lahey Clinic His subject is "An Unusual Case of Spontaneous Idiopathic Hemopneumothorax with Certain Features Resembling an Acute Surgical Abdomen" Page 687 Address 605 Commonwealth Avenue, Boston

KING, RICHARD B A B, M D Harvard Medical School, 1925 Resident Physician at Massachusetts General Hospital Address Massachusetts General Hospital Associated with him is

DACEY, H GLADYS B S Simmons College, 1921 Research Assistant in Bacteriology to Dr Frederick T Lord Address Massachusetts General Hospital Their subject is "Spirochaetes and Fusiform Bacilli in the Sputum" Page 689

### The Massachusetts Medical Society

#### SECTION OF OBSTETRICS AND GYNECOLOGY

Foster S Kellogg, M D Frederick L Good M D  
Chairman Secretary  
Frederick J Lynch M D Clerk

#### *What is the Treatment of a Suspected Case of Placenta Praevia?*

Every case of bleeding occurring in the last trimester should be considered due to placenta praevia until it is proved otherwise

Sir Hallday Croom of Edinburgh says that "a woman's chance of recovery from placenta praevia rests chiefly with the man who sees her first" Where possible, hemorrhage, even if slight, calls for hospital care and not for observation at home

In the hospital, time should not be needlessly wasted before making a diagnosis Standard hospital orders for bleeding cases should at least cover the following

## MASSACHUSETTS GENERAL HOSPITAL ANNUAL REPORT

The Massachusetts General Hospital, according to the Trustees' Annual Report for 1927, treated 144 patients a day free of charge last year 143 who paid small amounts for the service and only 83 patients a day who paid the regular charge. These figures show an increase in the free and low charge patients and a decrease in those who paid full rates.

The report amplifies on the lines of research being carried on in the hospital and stresses the most important needs of the institution: a new ward building, a central clinico-pathological laboratory and new apparatus and quarters for the X Ray Department.

## ROCKEFELLER FOUNDATION ACTIVITIES

President Vincent of the Rockefeller Health Foundation has recently released for publication an account of the activities of the Foundation for 1927. In pursuit of its health activities \$11,223,124 were disbursed from income and capital. A list of these activities showing the diversity of its interests and the varied fields in which it has worked deserves to be published in full.

(1) It aided local health organization in eighty-five counties of six States in the Mississippi flood area. (2) operated an emergency field training station for health workers in this region besides contributing toward the support of nine other training centers elsewhere. (3) assisted nine schools or institutes of public health and three departments of hygiene in university medical schools. (4) gave aid to seventeen nurse training schools in nine countries. (5) furnished funds for land buildings operation or endowment to nineteen medical schools in fourteen countries. (6) supported the Peking Union Medical College. (7) paid two million dollars toward a new site for the University of London. (8) helped Brazil to maintain precautionary measures against yellow fever. (9) continued studies of that disease in West Africa on the Gold Coast and in Nigeria. (10) had a part in malaria control demonstrations or surveys in eight States of the Southern United States and in eleven foreign countries. (11) aided nineteen governments to bring hookworm disease under control. (12) contributed to the health budgets of 268 counties in twenty-three states of the American Commonwealth and of thirty-one similar governmental divisions in fourteen foreign countries. (13) helped to set up or maintain public health laboratory services or divisions of vital statistics, sanitary engineering or epidemiology in the national health services of nineteen countries abroad and in the State health departments of sixteen American States. (14) made grants for mental hygiene work in the United States and Canada. (15) provided funds for biological research at the Johns Hopkins University and aided investigations in this field at Yale University, the State University of Iowa, the University of Hawaii, the Bernice P. Bishop Museum in Honolulu and certain universities of Australia. (16) helped the League of Nations to conduct study tours or interchanges for 125 health officers from forty-four countries to supply world-wide information about communicable diseases to train government officials in vital statistics and to establish a library of health documents. (17) provided directly or indirectly fellowships for 564 men and women from fifty-two different countries and paid the traveling expenses of 115 officials or professors making study visits either individually or in commissions. (18) made minor appropriations

for improving the teaching of the premedical sciences in China and Siam for the operating expenses of hospitals in China, and for laboratory supplies, equipment, and literature for European medical centers which have not yet recovered from the after-effects of the war. (19) lent staff members as consultants and gave small sums for various purposes to many governments and institutions. (20) made surveys of health conditions and of medical and nursing education in fourteen countries.

## CONNECTICUT'S STANDING SHORTLIVED

A recent review of the smallpox situation in the United States by the American Association for Medical Progress reveals the fact that for the fifth successive year the United States reported more smallpox cases in 1927 than any other country except India. A fact not to be proud of! The report goes on to say that only three states were entirely free from the disease in 1927—Connecticut, New Hampshire and Vermont.

Connecticut was proud of this fact—but times have changed for the new year 1928. In fact the last few hours of the old year ushered in a small epidemic of smallpox which required the vigilance of all the health officials in the areas affected, and in adjoining areas to keep it from spreading and assuming larger proportions. There were 145 cases of smallpox from January first to March thirtieth, 1928, in spite of all the precautions that were taken about 200,000 people having been vaccinated and cases isolated as soon as they were discovered (a difficult matter because of the mildness of the disease).

The above report further reiterates the well known fact that in both the United States and England smallpox is most menacing where anti-vaccination sentiment is strongest. In sixteen states with complete records available it was shown that in 1925 and 1926 of the 16,658 cases reported 91 per cent. had never been vaccinated, 7 per cent. had been vaccinated seven or more years previously and 2 per cent. had been vaccinated within seven years (including many vaccinated after exposure).

The Connecticut record tallies with this since reports show that over 90 per cent. of its smallpox cases had never been vaccinated (one of these a man seventy-one years old who had been told that he was too old to have the disease) and the few cases which had been vaccinated were vaccinated 22, 43 and 44 years previously.

And now during the past few days 5 smallpox cases are found in Bristol—*Bulletin of the Connecticut State Department of Health*.

## MONKEYS MAKE A VALUABLE CONTRIBUTION TO MEDICINE

In the portion of the Rockefeller Foundation Annual Report as of May 6 inst. the studies on yellow fever in the West Indies and Latin America are recorded as showing success. Attention is given to the same disease in West Africa and it was found necessary to learn in the first instance whether the same form of malaria is found in Africa as in the countries referred to above and also whether the disease is spread by the same mosquito.

Experiments conducted on the local fauna were disappointing but the use of the Indian crown monkey showed that these animals react to the malaria parasite in the same way as that found in human beings. After infecting the monkeys with malaria

B, "Labellus de Dentibus" (d) France 1582, Hemard, Urban, "Recherche de la Vraye Anatomie des Dents" (e) England, 1686, Allen, Chas, "The Operator for the Teeth" (f) America, 1801, Skinner, R C "A Treatise on the Human Teeth" (g) Mexico, 1823, Parrott, G S "Reflexiones la Importancia de Conservar la Dentadura"

6 Dental books published prior to 1700 Digitus, Jn, 1587, Horsti, 1595, Rulandi 1597, Ingolstetter, 1595, Liddle, 1628, Strobelberger, 1630, Typokowski, 1674, Stusser, St Fr, 1675, Martin, B, 1690

7 Fauchard's "Le chirurgien Dentiste" Complete editions—1728, 1733, 1746 and 1786 Photographs of the original manuscript of Vol 1 His chateau Historical records of his work

8 Fauchard's contemporaries The most complete exhibit of important dental literature of this period France—Jourdain, 1724, Gerouldy, 1737, Bunon, 1741, 1743, Mouton, 1746, LeCluse, 1754, Bourdet, 1757, 1762, 1771, 1782, (2) 1787, Auzebi, 1771, De Chemant, 1797, Mahon, 1798 Germany—Kraeutermaun, 1747, Stumpff, 1753, Runge, 1755, Pfaff, 1756, Pasch, 1767, Brunner, 1771, Courtois, 1778, Plenck, 1778, 1779, 1786, 1803, Serres, 1778, 1791, 1804, Andree, C A, 1790, Zincker, 1794, Hirsch, 1796, Ettmuller, 1798, 1800 Italy—Carnelli, 1793, Comparini, 1793 England—Hurlock, 1742, Berdmore, 1768-70, Ruspini, 1750, 1768, 1797, Woofendale, 1783, Blake, 1801, Fox, 1803

9 John Hunter's "Natural History of the Human Teeth" An example of the intense interest in dentistry of that period as shown by the number of editions and translations published London, 1771, 1778, 1778 2nd edition, 1803, 1835, 1861, Dordraci, 1773, Leipzig, 1780, Hague, 1780, Paris, 1839, Philadelphia, 1839, New York, 1839

10 Contemporary American dentistry as gathered from early New York newspapers beginning with James Mills, 1735, the Woofendales, Baker, Poree, Hamilton, Dubuke, Fisher, Dustwige, the Greenwoods, Skinner, Le Mayeur, and others

11 First dental publications in America Fourteen in number, 1801-28 "

The Boston Medical Library is not so rich in material of this sort as is desirable It is hoped that it may be possible to arouse interest in this matter in order that the Library may become a repository for the older and rarer works on the subject of dentistry It is of the utmost importance as well as interest, that those who are seriously studying this subject should have available all, or as much as possible of the material which has been recorded concerning the advancement of the science as well as the art The changes which have from time to time, taken place in dental education, the requirements for registration, the organization and proceedings of the national, state and local dental societies all should be made accessible here in this institu-

tion In the event of larger quarters being secured for the accommodation of our ever growing collections, an event which cannot long be delayed, opportunity will be offered for very greatly expanding the value of this work shop for the dental profession. During the week of May 21st such old books as we have of particular dental importance and interest will be on exhibition in Holmes Hall Among them will be Dr Oliver Wendell Holmes' address at the time of organizing the Dental School as a part of Harvard University, an address alike interesting for the information it contains and its humor and literary merit

## MISCELLANY

### DEMAND FOR PUBLIC HEALTH WORK INCREASES IN CONNECTICUT

The week beginning April 30 was moving day in and about 8 Washington Street, Hartford, where all bureaus except the laboratory, of the State Department of Health have been located

But these quarters have been outgrown, so that it became necessary to acquire 'an annex' In fact for some time the situation has been so serious, with the clerical force rubbing elbows so closely and often sharing desk spaces, that it reminded one of the overcrowded rooming house where rooms served a double purpose provided the 'night' man did not arrive until after the 'day' man had left!

For a time there was confusion in the department while the shifting went on, but now out of the chaos we are back to normalcy and each bureau can carry on its activities under less tense and crowded conditions

The annex at 90 Buckingham Street, 'just around the corner' from department headquarters now houses the Bureau of Vital Statistics with ten members of the staff and the Bureau of Child Hygiene with seven staff members Ample room is now provided for these activities There is also a private garage on the 'estate' which because of its proximity to headquarters will greatly facilitate the work of the department mechanic who, through the Bureau of Supplies, maintains a repair schedule for department cars

The 'Annex' mail and telephone calls are routed through headquarters at 8 Washington Street, Hartford so no change will be necessary for health officials in the State who wish to address any other bureau than the Laboratory which is at 247 Pearl Street Hartford During office hours the telephone for the entire department is 2 2205—*Bulletin Connecticut State Department of Health*

### ROXBURY HEALTH UNIT

The trustees of the George Robert White Fund have decided to buy the former office building of the Hugh Nawn Contracting Company on Blue Hill Avenue and convert it into a health center The building is to be purchased for \$65,000 and adapted to its future use which includes roofing it with glass at an expense of approximately \$50,000

**CARROLL**—DR. JOHNS ALOYSIUS CARROLL died at his home in Boston May 6, 1928, aged 71. He was a graduate of Holy Cross College in 1882, and of Harvard Medical School in 1886. He settled in Worcester, joined the State Medical Society in 1892, and moved to Brookline about the year 1900.

He is survived by his widow who was Miss Sarah J. Hughes.

**BATTERSHALL**—DR. MARY HANNAH WOLFENDEN BATTERSHALL, a graduate of the Woman's Medical College of Pennsylvania in 1879, died at her home in Attleborough, May 4, 1928, at the age of 73.

Dr. Battershall joined the Massachusetts Medical Society in 1911. Her husband Dr. Joseph Ward Battershall of Attleborough, who died in 1922, had been a Fellow of the Society since 1879. They were the parents of Dr. Jesse Wolfenden Battershall, a Fellow of the Society practicing in the same city and medical examiner for the first Bristol County district.

Dr. Mary Battershall was one of the first women to practice medicine in this State. At the time of her death she was the first woman vice-president of the Republican City Committee.

**HURLEY**—DR. DANIEL BARTHOLOMEW HURLEY, a Fellow of the Massachusetts Medical Society since 1888, died at his home in East Boston May 5, 1928, aged 62. He was born in Arlington August 26, 1865, and was graduated from Harvard Medical School in 1887. He was a member of the fourth degree K of C, Flitton Council K of C, The Guild of St. Luke, The Catholic Alumni Sodality, The East Boston Medical Society, The Arlington Encampment of the Sons of Union Veterans of the Civil War and of the American Medical Association.

Dr. Hurley is survived by his widow, six sons and three daughters. One of the sons is Dr. William Rowe Hurley of Quincy and Boston, a Fellow of the Massachusetts Medical Society.

## OBITUARY

### RESOLUTIONS ON THE DEATH OF DR. WILLIAM E. CHAMBERLAIN BY THE WACHUSETT MEDICAL IMPROVEMENT SOCIETY

Dr. William E. Chamberlain was born in Vermont in 1861. He was graduated from the University of Vermont Medical School in 1883, and for the first five years of his professional life he practiced in Princeton, Massachusetts, coming to Rutland in 1888.

His practice covered a wide territory which necessitated many long drives in stormy weather and often with no remuneration except the satisfaction of a duty well done.

In addition to his professional duties, Doctor Chamberlain took an active part in Town affairs, serving on many important Town committees. He was for thirty years Chairman of the Board of Health and for an equal number of years the medical examiner for this district. He was also for many years school physician and physician to the Rutland Prison Camp and Hospital from its foundation until his resignation a year ago.

During the last twelve years of his life he labored under a severe physical handicap but in spite of this kept bravely working and always maintained

the cheerful attitude which was characteristic of him.

He was a member of the Massachusetts Medical Society, the Worcester District Medical Society, the Wachusett Medical Improvement Society and the National Prison Physicians' Association. He was survived by his wife Mrs. Bertha F. Chamberlain.

BE IT RESOLVED that in the death of Doctor Chamberlain our Society has lost a helpful and valued member, one whom we greatly respected and whose association with his fellow members was always a source of pleasure and profit.

AND BE IT RESOLVED that this expression of our loss be placed upon our records and that a copy be forwarded to his wife.

(Signed)

GEORGE N. LAPHAM

H. C. KILAY

WILLIAM B. DAMMON

## CORRESPONDENCE

### COOPERATION OF THE BOSTON MEDICAL LIBRARY AND THE MASSACHUSETTS MEDICAL SOCIETY

Mr. Editor

In order to forestall any possible misapprehension as to the chance of antagonism arising between the Massachusetts Medical Society and the Boston Medical Library, in the development of their respective plans, will you kindly publish the following extract from the minutes of a special meeting of the Executive Committee of the Library held Monday, May 5th, 1928.

VOTED That the Executive Committee of the Boston Medical Library go on record as wishing to cooperate with the Massachusetts Medical Society in forming plans to meet the needs of the Massachusetts Medical Society and of the Boston Medical Library.

Truly Yours

JOHN W. BARTON

President Boston Medical Library

### NOTES ON NATIONAL AFFAIRS

From Our Regular Correspondent

#### FEDERAL HEALTH COORDINATION

The Parker bill H. R. 11026 for the correlation of federal health activities which was the subject of an editorial in this *Journal* on March 29, 1928, passed the Senate on April 27th. This measure had previously been adopted by the House and so it now goes to conference as the Senate wrote in half a dozen or more amendments.

The most important provision added in the Senate is one restricting the tenure of office of the Surgeon General of the Public Health Service to eight years or two terms. Another amendment limits the number of sanitary engineers, dentists, and other non-medical scientific personnel who can be given a commissioned status to 110 with only 6 above the grade of surgeon and none above medical director. No pharmacist would be appointed in a grade above that of passed assistant surgeon.

The remaining features of the bill, including the detail of scientific personnel to other government bureaus and to educational institutions provision

germs the administration of a protective serum prevented the development of the disease

This discovery is regarded as very important

It seems reasonable to expect that this scientific procedure may be of more practical value than the transplantation of monkey glands into the human subject. Monkeys may thus contribute more in dealing with one of the worst diseases, than has been found of value by the exponents of testicular implantation

## UNITED STATES PUBLIC HEALTH SERVICE

### CERTAIN CHRONOLOGICAL LIST OF CHANGES OF DUTIES AND STATIONS OF COMMISSIONED AND OTHER OFFICERS OF THE UNITED STATES PUBLIC HEALTH SERVICE

MAY 2, 1928

Assistant Surgeon W H Sebrell Relieved from duty at Gallops Island, Boston, Mass., and assigned to duty at the Hygienic Laboratory, Washington, D C April 26, 1928

Assistant Surgeon George R Welch Relieved from duty at Stapleton, N Y, and assigned to duty at Gallops Island, Boston, Mass April 26, 1928

P A. Surgeon (R) W E McLellan Relieved from duty at M H, Boston, Mass., and assigned to duty with the U S Coast Guard April 30, 1928

## FEDERAL NARCOTIC FARMS

The Porter bill, introduced last month into the House of Representatives by Representative Porter of Pennsylvania, calls for the establishment of two Federal Narcotic Farms, and the creation of a Narcotic Division of the Public Health Service

The bill is being supported by the Bureau of Prohibition and is endorsed by the Wardens who have had experience in dealing with drug addicts in the Federal penal institutions According to Colonel A H Connor, Superintendent of Federal Prisons, 31 per cent. of the total prisoners of the three Federal prisons were convicted for violation of the anti narcotic laws, and 67 per cent of these are addicts

The large number of addicts in the Federal prisons would be cared for at the proposed farms, where treatment resulting in cures could be made possible

## COMMITTEE ON RADIOLOGICAL FRAUDS

The Committee on radiological frauds and improper practices of the Radiological Society of North America has recently filed its report, which seems to indicate that, in different parts of the country, fee-splitting in various forms is prevalent One of the most important sources of the practice comes from various organizations and corporations doing radiological work and selling stock to physicians who are thus induced to send patients to the particular organization

The Committee, feeling that the Society should go on record as being opposed to such practice has drawn up a set of resolutions defining improper radiological practices and establishing a strict code of ethics for radiological practitioners

## SENATE RATIFIES REVISION OF INTERNATIONAL SANITARY CONVENTION

The United States Senate on March 22 1928 ratified the revision of the International Sanitary Con-

vention signed at Paris on June 21, 1926 This is a revision of the International Sanitary Convention of January 7, 1912 The acceptance by the United States Senate of this revision of the International Sanitary Convention is of importance in international sanitary matters

Among the subjects dealt with in this treaty are Maritime quarantine, the reporting of outbreaks of diseases, sanitary precautions in infected ports and other matters relating to the prevention of the spread of diseases from one country to another More than 40 nations signed this revision at Paris in June 1926

The representatives of the United States at this meeting were Surgeon General H S Cumming and Surgeon W W King of the Public Health Service—*United States Public Health Service*

## MASSACHUSETTS LEGISLATIVE NOTES

Senate No 325 An Act providing for Certain Additions to the Bristol County Tuberculosis Hospital

This act provides for certain improvements and additions to the Bristol County Tuberculosis Hospital subject to the approval of the Department of Public Health, the cost not to exceed the sum of four thousand dollars This act shall take effect upon its acceptance by the County Commissioners provided that such acceptance occurs during this current year

House 1286 An amendment of H 1213 provides for a substitution schedule of amounts to be paid for specific injuries in addition to all other compensation

## RECENT DEATHS

CUMMINGS—DR EDWIN FRANCOIS CUMMINGS, a retired Fellow of the Massachusetts Medical Society, died at his home in Revere May 5, 1928, aged 77 He was a member of the 1877 class at Harvard Medical School, joined the State Medical Society and settled in Boston soon moving to Revere There and in the Beachmont section, he practiced until his retirement in 1920

He is survived by his widow a son and two daughters

CLARK—DR EZRA WARREN CLARK one of the oldest members of the Massachusetts House of Representatives, both in years and in point of service, a practitioner of Brockton for 33 years died at his home in that city of pneumonia May 1 1928, at the age of 85 He was born in Glover Vermont, October 12 1842 was educated in the schools of that town, and at Jefferson Medical College Philadelphia where he took an M D in 1870 For 22 years he practiced medicine at Derby, Vt., and was superintendent of schools there Moving to Brockton in 1895 Dr Clark began practice soon became interested in politics and was returned a representative in 1905 from the old 11th district He was a member of the Brockton Chamber of Commerce at one time a member of the school committee and a member of the Odd Fellows and Knights of Pythias While in the Legislature he was a friend of President Coolidge while the latter was in the House and later Lieutenant Governor and Governor Dr Clark was a retired Fellow of the Massachusetts Medical Society He is survived by three daughters

sold morphine without such written order The question was whether the words 'any person' in the section were limited to those persons who are required to register and pay the tax. The answer of the Supreme Court was "No

The law was upheld as a valid taxing measure designed primarily for the purpose of raising revenue. The Court points out that merely calling a law a tax measure does not necessarily make it so and cites the Child Labor Tax Act, which was held to be unconstitutional. The tax under the antinarcotic act amounts to about a million dollars a year which is a substantial sum and a real source of revenue to the federal government.

The fact that there is incidental regulation does not change the status of the law. On this point the Court said

It may be true that the provisions of the act forbidding all but registered dealers to obtain the order forms has the incidental effect of making it more difficult for the drug to reach those who have a normal and legitimate use for it, by requirement of purchase through order forms or by physicians' prescription. But this effect, due to the machinery of the act, should not render the order form provisions void as an infringement on State police power where these provisions are genuinely calculated to sustain the revenue features

Further in the decision, it was said.

Congress does not exceed its power if the object is laying a tax and the interference with lawful purchasers and users of the drug is reasonably adapted to securing the payment of the tax. Nor does it render such qualification or interference with the original State right an invasion of it because it may incidentally discourage some in the harmful use of the thing taxed

#### SMALLPOX 125 YEARS AGO IN THE VICINITY OF NEW HAVEN

*Editor NEW ENGLAND JOURNAL OF MEDICINE.*

Enclosed please find a copy of a letter appearing in the Monthly Bulletin of the New Haven Department of Health, Vol. LV No 2 February 1925 the number entitled Smallpox Prevention in New Haven. I thought it might be interesting enough to run in the JOURNAL.

Yours truly

GEORGE H BIGELOW M.D.,  
Commissioner of Public Health

(From the Monthly Bulletin of the New Haven Department of Health Vol LV No 2 February 1925 entitled Smallpox Prevention in New Haven)

#### SMALLPOX 125 YEARS AGO IN THE VICINITY OF NEW HAVEN

(The following letter was written by Juda Baldwin from North Humphreville-Stratford a location between what is now known as Milford and Stratford to her children Mr and Mrs Clement Botsford of Newton Conn. The original of this letter is in the possession of Miss Minnie Weed 96 Marvel road New Haven, Conn., a descendant of Juda Baldwin)

N H-Stratford April 28 1803

Dear Children —

This is to give you the unexpected and heavy news that Mr Baldwin your Father is no more in this world he died with that dreadful disorder the small

Pox on the 30th of March all the rest of our family has had the small Pox and is now recovered or nearly well. Martia Broke out the Natural way with the disorder about the 15th of March and the small Pox being likely to go through the country generally it was thought best to enoculate which we did all but John who was not willing on any account to take it. He has since had it the natural way and is now almost recovered and we are about cleaning our house.

You will undoubtedly conceive that since Martia was first taken we have had a very serious and distressing time our home a pest house for the small Pox, and Mr Baldwin dying much unexpected as we did not apprehend him to be dangerously ill until about the day before he died and we could have but very few Neighbours to visit us on account of the disorder we were obliged to mourn almost alone, as the Psalmist expresses it. We each of us individually desire to be remembered to you all and as we are sensible you will mourn with us. We desire your prayers to Almighty God that we may be suitably impressed with a sense of our loss and may not murmur at the will of Divine Providence but improve this lesson and prepare ourselves for our own change from this to the world of Spirits. We shall expect you to write soon after you receive this letter and we will then write to you again. As the Estate is left Intestate we shall wish for your advice in settling. We desire you to either send this or write to your Brother Heath at the Ninepartners (as the route from here is indirect) the first safe conveyance and inform him of his Father's death and our situation. Please to accept my sincere desires and prayers for your health and happiness now and in the world to come

JUDA BALDWIN

P S

You will undoubtedly be surprised at the Small Pox being in this unpopulous country but in the beginning of the winter it was brought from Canada and has in a great measure gone through the country. Of late the Kine Pox has been introduced and is of great use and will stop the Small Pox from spreading—this letter cannot be infected as it was wrote by a Neighbour where the Small Pox has not been

J B

#### NEWS ITEMS

**CELEBRATION OF HOSPITAL DAY IN LAWRENCE MASS**—The birthday of Florence Nightingale was celebrated May 12 at the Lawrence General Hospital as a feature of Hospital Day

**CURE OF PRIMARY ANAEMIA**—Professor Victor Schilling of Berlin has reported apparent cure of 99 out of 105 patients afflicted with pernicious anaemia under treatment with liver diet

**THE DRIVE FOR \$600,000 FOR THE ROBERT B. BRIGHAM HOSPITAL**—The General Chairman of the Robert B. Brigham Hospital Fund reports contributions of \$148,445 up to May 11

Committees of men and of women are actively at work and expect to secure the required amount at an early date

**ANNOUNCEMENT**—Erwin C. Miller M.D. has opened an office at twenty-seven Elm Street, Worcester Massachusetts

for a nurse corps, and a national advisory health council are unchanged

#### HOSPITALIZATION FOR VETERANS

Under suspension of the rules, as moved by Mrs Rogers of Massachusetts, the House on April 16th passed the bill, H R 12821, authorizing an appropriation of 15 million dollars for increased hospitalization for veterans. The bill states that construction of new facilities shall be done in a manner to be determined by the President, but the plan is to use a million dollars for a hospital in Connecticut and a similar amount for a hospital in Kentucky. Three millions will be devoted to a hospital in Philadelphia, or two hospitals, one in that city and one in New Jersey.

The committee report on this bill points out that the United States Veterans' Bureau is now using 50 hospitals, with a patient load of 7,301 tuberculous cases, 6,985 general medical and surgical cases, and 12,857 neuropsychiatric cases, a total of 27,143. The hospital capacity is only 21,142 beds with 1,876 in process of building in February, 1928.

#### MEDICAL CORPS FOR VETERANS BUREAU

A corps of commissioned medical officers similar to those of the Army, Navy, and Public Health Service, is proposed by H R 12627, upon which hearings were held on April 12th. The bill also provides for dental and nurse corps and a reserve. A number of witnesses advocated this measure, which was characterized as of vital importance for the continued operation of the Veterans' Bureau. The average age of the physician in this service is now said to be 45 years.

#### THE HEALING ART IN THE DISTRICT OF COLUMBIA

A favorable report has been made on the Bowman bill, H R. 12947 for the regulation of the practice of the healing art in the nation's capital. The report states that the bill will not prohibit the practice of those who believe in other methods of healing than the prescribing of medicine or the performing of surgical operations but specifically authorizes drugless methods. A basic science examination is the vital feature of this measure, while practice without a license is prohibited. Persons already in the practice of drugless healing on January 1 1928 would however be licensed without an examination. The report further says that the bill has the approval and support of the local Medical Society, Homeopathic Medical Society, Osteopathic Association and the Chiropractic Society, which is remarkable if true. The bill was outlined in detail in the JOURNAL for March 8th. A similar bill introduced by Senator Copeland, is before the Senate as S 3936.

A bill H R 16, to regulate osteopathy in the District of Columbia has been favorably reported and came up in the House on April 9th. The debate on this measure, as reported in the *Congressional Record* (pages 6348 to 6359) is most interesting, especially since a number of Congressmen stated that they went to members of this cult for treatment. No action was finally taken on the bill.

#### MORE FEDERAL MEDICINE

More Federal Medicine seems to be a regular heading in these notes but it is amply justified by the action of Congress. On April 16th the House passed a bill S 2948 already adopted by the Senate

to provide care and treatment of members of the civilian components of the army. This bill is designed to give government medical care to members of the Officers' Reserve Corps, National Guard, Citizens Military Training Camps, and similar persons who suffer injuries or diseases while on duty.

A bill, H R 11022 to extend medical and hospital relief to retired officers and men of the United States Coast Guard has passed the House and is now before the Senate.

Soldiers who have performed Mexican border duty would be granted hospitalization and other benefits under the terms of H R 12102.

In the Senate Mr Cutting has introduced a bill S 4150 to provide adequate compensation and treatment for veterans having a 'tubercular disease'.

#### THE GORGAS MEMORIAL

Both House and Senate have passed H R 8128 to authorize a permanent annual appropriation for the Gorgas Memorial Laboratory in Panama. The amount is \$50,000 a year, but the condition is imposed that the necessary building must be constructed within the next five years and that each Latin American country be invited to contribute, the total of such contributions not to exceed 75 per cent. of the sum from the United States.

#### NARCOTICS

Hearings on the bill of Representative Porter, H R. 12781 to establish two federal narcotic farms were held on April 26th and 28th, and various prison wardens and other persons appeared in support of it. Assistant Surgeon General Blue of the Public Health Service informed the committee that the conservative and indifferent attitude of European nations precludes any effective international regulation. Dr Blue and Representative Porter were both delegates to the Geneva Opium Conference of 1924. An unofficial American delegate attended the meeting of the Opium Committee in Geneva on April 12 1928.

The United States Circuit Court of Appeals for the First Circuit has held in *Gerardi v U S* that the requirement to register for the sale of opium is not applicable to unstamped packages. The constitutionality of the Harrison Anti Narcotic Act of 1914 was upheld by the United States Supreme Court on April 9, 1928, in the case of *Nigro v U S*. This will be reviewed in detail later.

#### FEDERAL NARCOTIC ACT UPHELD

The constitutionality of the Harrison Anti Narcotic Act of 1914, as amended in 1918, was sustained by the United States Supreme Court in the decision of *Nigro v U S*, handed down on April 9, 1928. The case had gone to the Supreme Court by certificate of the Circuit Court of Appeals of the Eighth Circuit with a request for answers to four questions. The Supreme Court answered only the first and second which dealt with the meaning and scope of the word 'person' in the first sentence of section 2 of the law, and with the general constitutionality of the act.

The second section of the Harrison law makes it unlawful for any person to sell, barter, exchange, or give away narcotics except in pursuance of a written order on a form issued by the Commissioner of Internal Revenue. In this case *Nigro* unlawfully

Councillors E. F. Coffey (Nominating) E. D. Gardner W. A. Nield H. E. Perry L. N. Tilden R. B. Butler (Alternate) S. V. Merritt D. J. Fennelly G. H. Hicks

Dr John B. Adams of Boston, read a paper entitled "Backache"

### ESSEX SOUTH DISTRICT MEDICAL SOCIETY

The Essex South District Medical Society held its annual meeting and dinner at the Tavern, Gloucester on Tuesday May 8 1928

Dr John M. Burne, the President of the parent society was present and spoke concerning the proposed new home for the Massachusetts Medical Society and also urged a large attendance at the annual meeting to be held in June at Worcester

The annual election resulted in the selection of the following officers for the ensuing year

President Dr O. S. Pettingill Middleton

Vice-President Dr C. L. Curtis Salem.

Secretary Dr R. E. Stone Beverly

Treasurer Dr Andrew Nichols 3d Danvers

Librarian Dr C. M. Cobb Lynn.

Commissioner of Trials Dr J. E. Simpson Salem

Censors Dr J. F. Jordan (Supervisor) Peabody

Dr P. J. Finnegan, Salem Dr L. C. Swan Beverly Dr C. L. Holtt, Lynn Dr H. E. Whitaker Gloucester

Councillors Dr J. Armand Bedard Lynn Dr J. F. Jordan Peabody Dr P. P. Johnson Beverly Dr A. N. Sargent, Salem Dr J. W. Trask Lynn Dr E. B. Hallet Gloucester Dr C. H. Phillips Beverly Dr W. G. Phippen Salem Dr R. E. Stone Beverly Dr W. T. Hopkins Lynn Dr F. W. Baldwin Danvers

Executive Committee Dr J. G. Adams Salem Dr Hanford Carvell, Gloucester Dr H. M. Lowd Swampscott Dr W. F. Haves, Beverly Dr A. H. Stanhope Middleton Dr C. A. Bonner Hathorne

Nominating Councillors Dr E. B. Hallet, Gloucester

Alternate Nominating Dr W. T. Hopkins Lynn

The guest of the evening was Dr Willard C. Rappere of New Haven Connecticut, Director of Study for the Commission on Education who spoke upon Medical Training in Relation to General Education and Medical Practice

The presence of ladies which has become an annual feature added much to the enjoyment of the occasion

Attendance 127

Wm T Hopkins Reporter

### THE NORFOLK DISTRICT MEDICAL SOCIETY

At the annual meeting of the Norfolk District Medical Society held May 9 the following officers were elected

President, Dr M. Victor Safford Jamaica Plain

Vice-President, Dr S. F. McKeen Brookline

Secretary Dr Frank S. Cruickshank Dorchester

Treasurer Dr George W. Kaan Boston

Commissioner of Trials Dr H. F. R. Watts Dorchester

Nominating Councillors Dr David G. Eldridge

Dorchester Dr C. S. Francis (alternate), Brookline

Censors Dr H. T. Holland Jamaica Plain Supervisor Dr C. E. Shay Roxbury Dr J. E. Hall

Dr S. F. McKeen Brookline Dr A. E. Davison Milton.

Councillors Dr David N. Blakely Brookline Dr Frank A. Briggs Foxborough Dr Walter L. Burrage Brookline Dr Andrew P. Cornwall Brookline Dr Samuel Crowell Dorchester Dr Frank S. Cruickshank Brookline Dr F. P. Denny Brookline Dr David G. Eldridge Dorchester Dr Miner H. A. Evans Dorchester Dr H. J. Fitz-Simmons Jamaica Plain Dr C. S. Francis Brookline Dr Walter A. Griffin Sharon Dr J. B. Hall Roxbury Dr A. H. Hodgdon Dedham Dr H. T. Holland Jamaica Plain Dr Joseph Holzman Roxbury Dr I. R. Jankelson Roxbury Dr George W. Kaan Boston Dr R. D. Schmiat Dorchester Dr W. B. Keeler Roxbury Dr Edward B. Lane Jamaica Plain Dr John W. Lane Dorchester Dr Walter A. Lane Milton Dr Edward N. Libby Jamaica Plain Dr C. W. McDonald Roxbury Dr H. W. Martin Roxbury Dr S. F. McKeen Brookline Dr E. C. Norton Norwood Dr Mabel D. Ordway Jamaica Plain Dr M. Victor Safford Jamaica Plain Dr D. F. Sughrue Roxbury Dr F. S. Schmidt Jamaica Plain Dr H. F. R. Watts Dorchester Dr Paul R. Withington Milton

### THE HARVARD MEDICAL SOCIETY

A meeting of the Harvard Medical Society was held on Tuesday, May 8 1928 in the Peter Bent Brigham Hospital at 8 15 o'clock. After the presentation of cases two papers were given. Miss Thelma Tubbs of the Brigham Hospital Nutritional Clinic spoke on the Management of Simple Obesity in an Outpatient Clinic. She was followed by Dr John C. Scarff who spoke on Studies in experimental production of lung abscess. Dr Harvey Cushing presided.

The first case was presented by Dr Houck. The patient was an American born chauffeur of 31 who had entered the hospital three months ago complaining of a cough which was persistent and productive of a large amount of foul sputum. His past history was negative except for a tonsillectomy and submucous resection in October 1927. His present illness began last December with a sudden onset of asthma, coldness and perspiration an hour and a half later he felt as if something broke under his sternum and he coughed up a large quantity of sputum. He spent the following two months in bed with palliative treatment from his local physician. On entrance to the hospital the physical examination was negative except for the right chest which showed dullness in front and behind, coarse râles bronchovesicular breathing and an area of amphoric breathing. He gave four positive Wassermann reactions. The white count varied from 8 to 22,000. The sputum showed spirochaetes streptococci diplococci but no pneumococci. X-ray showed three cavities in the upper right lobe. Arspenamine was followed by an erythematous dermatitis over the lower legs, and a course of mercury was stopped because the patient became salivated. No diagnosis was made.

The second case was presented by Dr Oldberg of the surgical service. The patient was a 65 year old housewife the last of whose four children was born 37 years ago. Her past history was negative until a year and a half ago when she had an attack of fever and pain in her right side which passed off in a few days. Three weeks before admission she



## NOTICE

## CORRECTION

On pages 603 and 604 in our issue of May 3 the publishers of Physical Diagnosis and Bronchoscopy and Esophagoscopy were incorrectly given Physical Diagnosis by Charles Phillips Emerson, A B, M D is published by J B Lippincott Company Bronchoscopy and Esophagoscopy by Chevalier Jackson, M D is published by W B Saunders Company

## REPORTS AND NOTICES OF MEETINGS

## MASSACHUSETTS PSYCHIATRIC SOCIETY

A regular meeting of the Massachusetts Psychiatric Society was held at the Boston Psychopathic Hospital on April 20, 1928. The speaker of the evening was Dr A. A. Brill of New York, who presented an illuminating paper entitled 'The Psychiatry of the Present Day from the Standpoint of the Psycho-analytical School'

Dr Brill drew an interesting parallel between the descriptive method of studying the psychoses with its minute elaboration and cataloguing of symptoms and the interpretative or psychoanalytical method. The latter has devoted its attention principally to an understanding of the underlying, inner meaning of the symptoms in the patient's conscious and unconscious mental life, in the same way that psychoanalysis investigates the latent content of the dream from its manifest material. This tendency in psychiatry has reached fruitful therapeutic and interpretative results through the work of various investigators in psychoanalysis. It was pointed out that the schizoid trends in certain neuroses are of great practical importance, that the so-called disposition for abnormal psycho-neurotic states is really a weakness of psychosexual evolution and that the deteriorations in the psychoses, even in the organic brain diseases, are essentially regressions rather than intellectual weaknesses.

The speaker also demonstrated how illuminating were Freud's new dynamic conceptions on the structure and functions of the mind and also his contributions to ego and libido organization, for an understanding of psychotic and neurotic states and illustrated these conceptions with interesting case reports from an extensive psychiatric experience. Dr Brill's paper was attentively listened to and greatly appreciated by a large audience who found it both helpful and illuminating.

ISADOR S. CORIAT *Reporter*

## ESSEX NORTH DISTRICT MEDICAL SOCIETY

By invitation the Eighty-Seventh Annual Meeting of this Society was held at Haverhill Country Club, Haverhill Mass., Wednesday May 2 with the President, Adelbert M. Hubbell in the chair.

At the business meeting the following officers were elected:

President Gustave E. Kurth Lawrence  
Vice-President Roland L. Toppan Newburyport.  
Secretary-Treasurer J. Forrest Burnham Lawrence  
Auditor Thos. B. Murphy, Lawrence  
Censors Fred S. Smith, North Andover John E. F.

Bryant, Haverhill, Edw. P. Laskey, Haverhill Chas. J. Burgess, Lawrence Chas. F. Warren, Amesbury  
Councilors Elmer S. Bagnall, Groveland, J. Forrest Burnham, Lawrence, Henry F. Dearborn, Lawrence Arthur P. George, Haverhill, T. Raymond Healy, Newburyport Fred S. Smith, North Andover, Frank W. Snow, Newburyport, Leroy T. Stokes, Haverhill W. Dacre Walker, Andover

Nominating Councilor T. Raymond Healy, Newburyport Alternate Fred S. Smith, North Andover

Commissioner on Trials Israel J. Clarke, Haverhill

Committee on Funds Granville S. Allen, Lawrence George B. Sargent, Lawrence Frank B. Pierce, Haverhill

Correspondent to NEW ENGLAND JOURNAL OF MEDICINE The Secretary

The Committee appointed to act in conjunction with committees from other District Societies upon the matter of Workmen's Compensation and Automobile Insurance Acts, and other pertinent matters, presented a report and the following resolution was adopted by this Society:

*Resolved* I That Essex North District Medical Society favors the classification of patients, under the Workmen's Compensation and Automobile Insurance Acts, by Hospital trustees as private and semi-private cases.

II That Hospitals caring for such patients be paid the cost rate of maintenance.

III That physicians who care for these cases be paid for their services.

IV That the Councilors of this Society be directed to bring the subject to the attention of the Council of the Massachusetts Medical Society and to use their best efforts to make these principles effective.

The speakers of the day were:

I Henry R. Viets, M.D., of Boston upon Recent Advances in Neurology. The discussion upon this paper was opened by Elmer S. Bagnall, M.D., of Groveland.

II Arthur W. Allen, M.D., of Boston, upon Treatment of Fractures of the Long Bones.

III Jas. S. Stone, M.D., of Boston, Executive Secretary spoke upon the 'House Fund,' which is now being raised by subscription to purchase a building in Boston to house all the activities of the State Society.

Following this last address a committee of three was appointed to enlarge itself by 29 members and this enlarged committee to interview each member of Essex North during May, and solicit contributions for the House Fund. The committee is Adelbert M. Hubbell, Haverhill Gustave E. Kurth Lawrence J. Forrest Burnham Lawrence.

## BRISTOL SOUTH DISTRICT MEDICAL SOCIETY

The annual meeting was held in the New Bedford Public Library New Bedford on Thursday May 3, at 5 P. M.

The following officers were elected:

President J. G. Hathaway

Vice-President G. L. Richards

Secretary-Treasurer G. E. Borden

Commissioner of Trials A. C. Lewis

Censors S. V. Merritt (Supervisor), D. D. Pratt,

F. M. Howes W. F. MacKnight, D. P. O'Brien

Dr Lester C Miller presented a very interesting and instructive oration under the title of A Survey of the Hospitals of the Worcester District This was a studious analysis of the standing of and work done by the eleven hospitals in the district covered by the Worcester District Medical Society Dr Miller brought out very many instructive matters of interest relating to the spirit which led to the creation of these hospitals and the amount of work done in them as compared with that in other localities This oration was a very broad survey of the general principles covering the service which hospitals render to the communities and was especially interesting to the physicians of the Worcester District Medical Society

The concluding exercise was the introduction of Dr Philip H Cook of Worcester, who is to serve for President for the ensuing year Regret was expressed that Dr Shattuck, who has been Vice-President, has been ill so that during much of the year he was unable to attend meetings and perform many of the duties which would otherwise devolve upon him

The following officers were elected

President Dr Philip H Cook Worcester  
Vice-President Dr Albert M Shattuck Worcester

Treasurer Dr George O Ward Worcester  
Secretary Dr Charles A Sparrow Worcester  
Orator Dr William E Denning Worcester  
Councilor on Nominations Dr David Harrower Worcester  
Dr Royal P Watkins Worcester Alternate

Committee on Funds Dr Ray W Greene Worcester  
Dr Kendall Emerson Worcester Dr Royal P Watkins Worcester

Commissioner on Trials Dr Walter P Bowers Clinton

Councillors and year in which term began—Dr Walter P Bowers Clinton 1902 (Councilor for life by virtue of being Past President of the Society)  
Dr Samuel B Woodward Worcester 1902 (Councilor for life by virtue of being Past President of the Society)  
Dr Leslie R Bragg Webster 1922 Dr William J Delahanty Worcester, 1913 Dr George A Dix Worcester 1921 Dr George E Emery, Worcester 1920 Dr Michael F Fallon Worcester 1916 Dr Homer Gage, Worcester 1906 Dr James J Goodwin, Clinton 1921 Dr Ray W Greene Worcester 1907 (continuous except 1915 1916) Dr David Harrower Worcester 1905 Dr Ernest L Hunt, Worcester 1918 Dr Albert G Hurd Millbury 1916 Dr Arthur W Marsh Worcester, 1922 Dr Lester C Miller Worcester 1921 Dr Edward H Trowbridge, Worcester 1924 Dr Royal P Watkins Worcester 1927 Dr Frank H Washburn Holden, 1916

Censors Dr George A Dix Worcester Supervisor Dr John J Cummings Worcester Dr Roy J Ward Worcester Dr Roger W Schofield Worcester Dr Gilman L Chase Clinton

Nominating Committee Dr John W O'Meara, Worcester Dr Joseph W O'Connor Worcester Dr Charles M Church Millbury Dr Ralph W Ellis Worcester Dr Oliver H Stansfield Worcester

Library Committee Dr William F Lynch Worcester Dr Oliver H Stansfield Worcester Dr William F Holzer Worcester

Librarian Dr Albert C Getchell Worcester

Auditing Committee Dr Harold V E Williams, Whitinsville Dr James A Givan Worcester Dr Edward J Halloran, Worcester

Since the last annual meeting the following members have died

Dr William Eugene Chamberlain, Rutland  
Dr John Thomas Duggan, Worcester  
Dr Caroline Amelia Osborne, Worcester  
Dr Edward Burnside Simmons, Worcester  
Dr Hosea Mason Quinby, Worcester

## THE CENTRAL HEALTH COUNCIL

The reorganized Massachusetts Central Health Council will hold its first meeting on May 22 at the Twentieth Century Club 3 Joy street, Boston

A short business session to be attended by the members of the Council and of the Administrative Board, will be held at 5 30 P M

Following the business session there will be a dinner at 6 30 P M., after which there will be two addresses as follows

Dr George H Bigelow Commissioner Massachusetts Department of Public Health, 'Are There Any Unsolved Problems?'

Dr Warren F Draper, Assistant Surgeon General, United States Public Health Service Washington, D C 'Accomplishments through Cooperation among Health Agencies'

This dinner meeting is open not only to the delegates to the Council but to members of the Massachusetts Medical Society and others who may be interested It is desired to give the new Council an impetus to its new program by securing a good attendance at its first meeting Dinner reservations will be \$1 50 per plate and should be made in advance through the office of the Massachusetts Society for Mental Hygiene 5 Joy Street, Boston Checks however should be made out to the Massachusetts Central Health Council

HENRY B ELKIND M D Secretary

## HARVARD MEDICAL SOCIETY

The next regular meeting of the Harvard Medical Society will be held as usual in the amphitheatre of the Peter Bent Brigham Hospital Tuesday evening May 22nd, at 8 15 P M The program follows

1 Observations on the treatment of so-called nephrosis Dr M H Barker (20 min)

2 Effect of quinidine sulphate on ventricular tachycardia and ventricular fibrillation Dr Marshall N Fulton (20 min)

3 Experimental production of mitral stenosis. Dr John Powers (20 min)

PERCIVAL BAILEY Secretary

## THE TRUDEAU SOCIETY

The next meeting of the Trudeau Society of Boston will be held on Monday evening June 4 1928 at 8 15 P M in John Ware Hall Boston Medical Library 8 The Fenway Boston

The speaker will be Dr Evarts A Graham of St. Louis subject Remarks on Pulmonary Suppuration'

Physicians medical students and nurses are cordially invited to attend this meeting

RANDALL CLIFFORD Secretary

began to have some discomfort after meals and one evening had an acute attack with chills and pain in her right side radiating to the back and shoulders. She recovered but immediately began to get yellow, her urine became dark colored, and her stools were white. The night of her admission to the hospital she had another attack and the nurse staying with her said she passed seven gallstones. When admitted she had bile in her stool and operation was delayed until she regained strength. She had another attack, and on operation the usual pathology of a small atrophic gall bladder containing a stone and a dilated common duct also containing a stone were found. She made a good recovery until five days after operation when she began to go down hill and became almost moribund. Glucose intravenously and rectally improved her markedly. She got better, but developed another condition. Her pupils on admission were unequal and reacted sluggishly, but little attention was paid to it. She began to have discomfort in the left eye and her cornea became hazy. After examination a diagnosis of glaucoma was made and this was later confirmed by the Eye and Ear Infirmary staff who pointed out that chronic glaucoma often undergoes an exacerbation after severe surgical operations.

Miss Tubbs in her paper pointed out that obesity plays a large part in life today, not only because of the change in women's styles, but also as a factor in maintaining health. Life insurance figures show that the mortality increases as the weight becomes greater. Of the eight or nine causes listed by them apoplexy, diabetes, kidney and heart diseases are the conditions affected most by an increase in weight due to fat.

The patients in the Out-door department are obese due to over-eating and to lack of exercise. A study of 27 women who weighed on the average 222 pounds showed that they all ate much butter and cream, were fond of ice cream and candy, and ate between meals. The intake was an average of 4000 calories per day. Few vegetables and fresh fruit were taken. To correct this default a diet was drawn up which included simple foods easily obtainable and suitable to the patient. The result gave an intake of 84 grams protein, 45 grams fats and 134 grams of carbohydrates, with a total of 1275 calories.

A series of 437 cases of women followed by the Nutritional Clinic gave the following results. Thirty five per cent of the patients did not return after the first visit for no known reasons. Thirty five per cent were classed as indifferent; these patients lost less than 10 pounds probably due to not holding to the diet. Five per cent were called the 'bad group'. This group was divided into first, those who did not follow instructions; second, those who gained weight; and third, those who stayed the same weight. The last twenty five per cent were the good group where the patients lost from 10 to 42 pounds. The interesting observation was made that the blood pressure went down as the loss of weight occurred. It was also noted that the first pangs of ravenous hunger, appearing at the beginning of the diet, left completely when the diet was continued.

In conclusion Miss Tubbs emphasized that it is important to tell the patients that it is up to them if success is to follow. In many cases one can't say that the blood pressure or the diabetes will improve unless the patient follows instructions. It may be

necessary to threaten them. Often an important factor is the unintelligence of the patient.

In the second paper of the evening Dr Scarff discussed the various ways of experimentally producing lung abscess. There are two possible ways by an infected pulmonary embolus, successfully done by Dr Cutler, or by aspiration of infected material by mouth.

Attempts were made to produce a lung abscess by cauterizing the lung through a bronchoscope, by causing necrosis with acid burns, by plugging bronchi with infected cotton. The same procedures were carried through the chest wall directly. All these attempts gave negative results. Then dogs were inoculated with pus from experimentally produced suppurating frontal sinuses in their own heads. This pus was put on a cotton plug and pushed into a bronchus. In five out of eight dogs so inoculated typical lung abscesses formed with liquefaction of tissue and encapsulation.

The factors in producing the result are possibly four. First, the bacteria found in these abscesses are invariably staphylococcus, streptococcus, a short Gram positive bacillus and a spore-bearing anaerobic bacillus. Spirochaetes are sometimes found, but these have been ruled out, because they are not found with pure cultures. Second, the increase of the sensitivity of the organism to the conditions of the respiratory tract. This is ruled out because a mixed infection always follows, even after pure culture inoculation. Third, the increased susceptibility of the animal to the organisms. Last, the obstruction of a bronchus.

Dr Scarff concluded that it is possible to produce an acute lung abscess by the bronchial method, and that the fourth and fifth factors listed above are necessary for the production of the result.

#### WORCESTER DISTRICT MEDICAL SOCIETY

The annual meeting of the Society was held at the Worcester Country Club on Wednesday, May 9, 1923.

Business meeting and election of officers was conducted at 6 P M.

Dinner was served at 7 P M to about one hundred members.

Through the courtesy of Dr Trowbridge, members of this Society who are not members of the Worcester Country Club were permitted to play golf before the meeting by signing up at the first tee and paying the green's fee of \$2.00.

After the dinner the President called the meeting to order and the prizes for the successful and unsuccessful golf players were presented.

The matter of soliciting subscriptions for the Home for the Massachusetts Medical Society was introduced by the President, who asked for questions. In answer to requests, Dr Kendall Emerson and Dr Walter P Bowers explained some of the important features of the plan with the gratifying news as reported by Dr Emerson that Dr John W Bartol, President of the Library is in cordial sympathy with the plan for securing a Home for the Massachusetts Medical Society.

Dr A W Marsh of Worcester outlined in a general way the program of the Annual Meeting of the Massachusetts Medical Society, which is to be held in Worcester this coming June.

*The Extra-Ocular Muscles* by DR LUTHER C PETER.  
Lea & Febiger Philadelphia

Dr Peter's book is made up of the subject matter of his lectures at the Graduate School of the University of Pennsylvania. It is divided into five parts devoted respectively to anatomy and physiology, heterophoria, heterotropia, paralytic squint, and nystagmus. Dr Peter writes in a very concise and practical way on one of the very difficult divisions of ophthalmology and has produced a book which may be regarded as one of the best short treatises on the subject. Although we cannot agree with Dr Peter in all his conclusions—and especially in his view that the scotoma of amblyopia exanopsia is acquired and not congenital—yet his book can be cordially recommended to students and to the profession.

*International Clinics* Volume I Thirty-eighth Series 1928 J P Lippincott Co Philadelphia

This number of the *International Clinics* maintains the good reputation that has long been established. As usual a wide range of subjects in medicine, surgery and the specialties is covered by men from the leading clinics in this country and in Europe.

This volume opens with an interesting well balanced, and instructive discussion of visceroptosis by John Phillips. He emphasizes the need for careful study of these cases and supervision of diet and exercise. A clearly illustrated series of exercises is given in detail.

A careful report on the use of sanochrysin in pulmonary tuberculosis at the Vardaasen Sanatorium is given by Alb Tillisch.

William D Reid presents an excellent picture of bacterial heart disease especially of the subacute and acute forms.

The clinic of John B Deaver takes up the problem of uterine fibroids and includes the operative details of hysterectomy.

There are three valuable papers dealing with traumatic surgery.

One of the most interesting articles is the Mütter lecture of the College of Physicians of Philadelphia delivered by E Starr Judd on the pathogenesis of peptic ulcers. Although little new is added he gives a very good review of the experimental work and of the present state of knowledge of this subject.

An entertaining historical paper on medicine of the Renaissance is contributed by J R Oliver.

Henry W Cattell gives his customary excellent review of the progress of medicine.

The foreign clinics in this volume are as a whole rather disappointing some being merely brief outlines and others seeming as much to advertise the clinic as to instruct the reader.

*Studies from the Rockefeller Institute for Medical Research* Reprints Volume LXII 1927

The sixty-second volume of studies from the Rockefeller Institute presents its usual imposing list of over two-score titles covering most of the diseases known to beasts and man including many that the average medical man meets for the first time in these pages.

The contributions are of their usual merit though no signal discovery serves to draw attention to one more than another. Even the six hundred and one

pages do not compensate for the absence of such names as Rous, Avery and Northrup. The following papers seem worthy of mention.

Noguchi adds several more links to the chain with which he appears to be connecting Oroya fever and *Bartonella bacilliformis* in an etiologic relationship. Cowdry and Marsh point out the apparent identity of South African jagzlekte and Montana progressive pneumonia of sheep. Olitsky presents an excellent summary of the recent work on foot-and-mouth disease. Jones and Little describe a new organism showing some apparent relationship to the influenza group with which they have produced infectious granular vaginitis in cows.

The field of radiant energy receives contributions from Brown and Pearce in studies of the effect of light on transplantable neoplasms and on experimental syphilis from Harry Clark in studies of the effect of X-rays on a protozoan *Colpidium colpoda*.

Five interesting but highly technical chemical papers are contributed by Levene and his associates. Van Slyke and his associates continue their studies of gas and electrolyte equilibria of the blood and once again he shows his ingenuity in the development of new apparatus and technical methods with a description of a portable manometric gas apparatus.

Further studies on the toxic properties and immunology of the pneumococcus are presented by Julianne Reimann and Tillett.

Bronfenbrenner's beautifully controlled studies of the mechanism of the bacteriophage deserve mention.

Of greatest interest to the practitioner of medicine are two reviews. Flexner and Cohn. Dr Flexner points out clearly the fallacies of the various claims made for herpes or other viruses as the etiologic agent of epidemic encephalitis. Dr Cohn gives an excellent discussion of heart disease from the point of view of Public Health.

*Handbook on Diet* By EUGENE E MARCOWICZ M.D.  
Philadelphia, 1928 F A Davis Company Pages 323

Books heretofore published have been written either in highly scientific terminology or so simply as to be comprehensible to any layman. The former have had a very limited field; the latter have often sacrificed accuracy for simplicity. The purpose of this work is to fill the gap between these two types of books.

The author hopes that in spite of its scientific accuracy, his book may prove simple enough in its terminology so that the physician may feel warranted in recommending its perusal to his patients.

No attempt at bibliography has been made. It is doubtful if this absence of bibliography makes the reading any easier for the layman and its absence may be deplored by readers with tendencies toward scientific accuracy. It is also doubtful if the layman will easily read all of this book, without the aid of a medical dictionary. These are however minor faults and in general it may be said that this volume of 323 pages deserves a place on the shelf reserved for books on Diet.

One may certainly agree with the author when he says that improving the taste of food is one of the main duties of those responsible for its preparation and the difficulty of doing this makes the term art justifiable. This aspect of diet is altogether too frequently lost sight of especially in connection with

## BOSTON DISPENSARY

The June meeting of the Clinical Staff of the Boston Dispensary will be held at 25 Bennet Street on Thursday evening, June 7th, at 8 00 o'clock

The following papers will be presented by members of the Division of Research

1 A Study of Bleeding and Clotting Time Before and After Tonsillectomy H J Inglis, MD

2 "The Diagnostic Value of Sugar Tests in Diabetes A Preliminary Report" James H Townsend, MD

3 "The Diagnosis of Unilateral Diseases of the Kidney by Functional Tests" Harold T Chamberlin MD, Joseph H Pratt, MD

4 'A Comparison of the Diagnostic Value of Functional Tests of the Kidney' Louis H Kramer, MD, David Davis, MD

All physicians are cordially invited to attend

MAYNARD LADD, MD President

JOSEPH J SKIRBALL, MD Secretary

## AMERICAN ASSOCIATION FOR THE STUDY OF THE FEEBLEMINDED

The Fiftysecond Annual Meeting of the American Association for the Study of the Feebleminded will be held at Haddon Hall, Atlantic City, New Jersey Thursday Friday, and Saturday May 31 June 1 and 2, 1928

## THE RADIOLOGICAL SOCIETY CONVENTION

The Radiological Society of North America will hold its Annual Convention in Chicago December 3rd, to 7th inclusive, 1928, at the Drake Hotel, Lake Shore Drive and North Michigan Avenue

Much attention is being given to arranging for Scientific and Commercial Exhibits These exhibits will afford a Post Graduate course of instruction in nearly every branch of Medical Science Clinics covering radiological problems as well as other branches of medicine will be given every day during the session

## SOCIETY MEETINGS

May 17—New England Heart Association For program see page 658

May 22—The Central Health Council For complete notice see page 711

May 22—Harvard Medical Society For program see page 711

May 31, June 1 2—American Society for the Study of the Feebleminded Detailed notice appears above

June 4—The Trudeau Society Detailed notice appears on page 711

June 7—Boston Dispensary Complete notice appears above

June 18 20—Meeting of the American Association for the Study of Goltser See page 425 issue of April 12 for complete notice

June 18 22—Convention of the Catholic Hospital Association Complete notice appears on page 1597 issue of February 15

December 3 7—Radiological Society Convention Detailed notice above

## BOOK REVIEWS

*The Human Body* by LOGAN CLENDENING MD Al fred A. Knopf New York & London 1928 xxii + 399 pp Illus

This large heavy volume is designed to give the lay reader a knowledge of his body and its functions with brief accounts of diseases of the various organs It is fairly well written although at times

the author's style is rather breezy and not entirely scientific The illustrations, however, are especially good

The reviewer does not feel that such a book is likely to have a very large appeal from the physician's point of view A certain number, of course, will be sold directly from the bookstalls to the present public, eager for all sorts of medical knowledge. Occasionally some patient might like to read about, or see some pictures of diseased organs and such a book will fulfill his needs

*Diabetes and Its Treatment by Insulin and Diet* by ORLANDO H PETTY, MD Fourth Edition F A Davis Co, Philadelphia, Pa., 1928

This manual consisting of 130 pages of text and 20 pages devoted chiefly to food values and dietary formulae gives almost too briefly information regarding the nature of diabetes the use of insulin and diet, testing for sugar in the urine, and diabetic hygiene Food tables are provided giving the content of salt and vitamins as well as of carbohydrate, protein and fat In addition various common foods are grouped according to their fuel or caloric values and according to their content of acid forming or base-forming elements The chapter on the use of insulin is well illustrated The simplicity and brevity of the author's treatment are commendable

*The Surgical Clinics of North America* (Lahey Clinic Number—February, 1928)

This book is well worth reading carefully for any doctor, especially those who are doing major surgery It is a remarkable compilation of surgical monographs, and the fact that it expresses the experience of a single group of associated men in the city where this JOURNAL has its home must add interest to all New Englanders

Dr Lahey's articles on "Common Duct Stone", "Gastrojejunal and Jejunal Ulcer" and "Esophageal Pulsion Diverticulum" are particularly worthy of note They are illustrated by good cases and the conclusions are sound Anyone who is in the habit of observing thyroidectomy scars can after reading his description of the incision understand why or not the scar is satisfactory

Dr Clutes articles are less original but well illustrated We found his description of his case of "Elephantiasis" worth attention

Dr Mason's discussions of "The Radical Operation for Carcinoma of the Breast" is clear and finely illustrated Some will question the removal of a drain as speedily as he advocates All of us who do gall bladder surgery have seen many times when we would like to have had his special air cushion under our patient's back

In these days when some internists and most dermatologists frown upon surgery in relation to carbuncles, it is refreshing to read Dr Fife's article on the subject. The question may be raised whether a two weeks course of vaccine as advocated by him would be considered correct by a practical immunologist.

Early Malignancy of the Colon would more often be diagnosed if more doctors were familiar with Dr Jordan's discussion of the subject

We have not mentioned all of the articles or authors for we hope we have said enough to show that this number of *The Clinics of North America* is worthy of your attention.

# The New England Journal of Medicine

VOLUME 198

MAY 24, 1928

NUMBER 14

## The Massachusetts Medical Society

### PROGRAM OF THE ONE HUNDRED AND FORTY-SEVENTH ANNIVERSARY

THE Exercises of the Anniversary will be held on Tuesday and Wednesday, June 5 and 6, 1928, at the Hotel Bancroft and Chamber of Commerce Building, Worcester

#### STANDING COMMITTEES

*Of Arrangements*—W T S Thorndike, H Q Gallupe James Hitchcock, T H Lanman E P Hayden, F H Colby

*On Publications and Scientific Papers*—E W Taylor, R B Osgood, F T Lord, R M Green, A C Getchell

*On Membership and Finance*—D N Blakely, Algernon Coolidge, Samuel Crowell, Gilman Osgood, Homer Gage

*On Ethics and Discipline*—David Cheever, W D Ruston, S F McKeen, Kendall Emerson, A C Smith

*On Medical Education and Medical Diplomas*—J F Burnham, A G Howard, R L DeNormandie, H P Stevens, C H Lawrence

*On State and National Legislation*—J M Birme, E H Stevens, F E Jones, T J O'Brien, Shields Warren

*On Public Health*—Victor Safford, E F Cody, R I Lee, T K Kenney, F G Curtis

*On Public Instruction*—A W Marsh, W P Bowers, W H Robey, R I Lee, F W Snow, Conrad Wesselhoeft, F S Hopkins, W J Bricklev

#### DELEGATES AND ALTERNATES TO THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION

*Delegates*—F B Lund, Boston, E F Cody, New Bedford, H G Stetson, Greenfield, C E Mongan, Somerville, J F Burnham, Lawrence, R I Lee, Boston

*Alternates*—W H Robey, Boston, Kendall Emerson, Worcester, L A Jones, Swampscott, Gilman Osgood, Rockland, W C Learv, Springfield, C H Lawrence, Boston

#### GENERAL INFORMATION

The profession is cordially invited to attend the exercises of the Anniversary

A Bureau of Information will be maintained by the Committee of Arrangements during the meeting, in the Lobby of the Chamber of Commerce Building This building stands next to the Hotel Bancroft on Franklin Street Both buildings may be entered by separate entrances and one may pass from the mezzanine floor of the hotel to the lobby of the Chamber of Commerce by a connecting bridge The rooms devoted to the commercial exhibits are between the mezzanine floor of the hotel and the main hall in the Chamber of Commerce building

A more detailed program, giving pictures and plans of the two buildings, details of the exhibits and a list of exhibitors, will appear in the official organ of the Society, THE NEW ENGLAND JOURNAL OF MEDICINE, in the issue of May 24, 1928 Reprints from this number will be distributed at the Bureau of Information

Parking in the streets in the vicinity of the hotel is restricted to thirty minutes Fellows are advised to use the parking space in the rear of the hotel, reached by Portland and Federal streets, or one of the three large garages which are within one or two minutes' walk. A diagram of the streets in the vicinity will appear with the detailed program in the JOURNAL.

All Fellows are requested to register as soon as they arrive, and to get their tickets to the buffet luncheon, to the golf links, if they like, and to the annual dinner, at the Bureau of Information The buffet luncheon will follow the meeting of the Council, on Tuesday, and will be free of charge Every Fellow whose dues have been paid is entitled to a ticket to the annual dinner on Wednesday, on the payment of \$2.50 Tickets for guests will be issued at \$3.00 each

Fellows are invited to visit the following Worcester hospitals Belmont Hospital, Belmont Street, Fairlawn Hospital, 189 May Street, Memorial Hospital, 119 Belmont Street, St Vincent Hospital 73 Vernon Street, Worcester City Hospital 71 Jacques Avenue Worcester Hahnemann Hospital, 281 Lincoln Street, Worcester State Hospital, Belmont Street

the use of diet by persons who, being sick, are therefore the more susceptible to mental or psychic influences

It is pleasing to see a book on diet which is readable, and it is something of a relief to have a book presented not in the stereotyped American manner, but in the rather more easy going Continental style. The book contains the usual index, and many brief but rather helpful tables. The last two chapters of the book are given over to classified lists of mineral waters and bath resorts, both European and American.

Throughout the text, one finds many keen clinical observations which indicate differences in usage between American and Continental customs, and perhaps as an aid to the hoped for lay reader, there are in many instances added in a word or two, the scientific reasons for the statements made.

In this country, one might think twice about recommending such an unusual if valuable food as caviar. It is therefore refreshing to quote the European point of view. Caviar belongs to the best tasting and most suitable foodstuffs we know and we use it often in the diet of the sick. It is suitable in states of fever when other protein containing foodstuffs cannot be used. Then, too, caviar is valuable as a food in diseases of the stomach and intestines, in the transition from liquid to solid diet, and in all cases where we wish to increase the nutrition in people who have weak digestive organs."

More than other volumes on diet which have recently come to the attention of the reviewer, this book should prove readable and instructive, to those who believe or who may be led to believe that there is such a possibility as utilizing the culinary art for the advancement of the physical and mental welfare of the sick patient.

*Diseases of the Mouth.* By STERLING V. MEAD D.D.S., Professor of Oral Surgery and Diseases of the Mouth, Georgetown Dental School. Professor of Dental Diseases of the Mouth, Georgetown Medical School etc. C. V. Mosby Co., St. Louis.

*Diseases of the Mouth* is a book of interest to the medical as well as to the dental profession. It is useful as a textbook for the student as well as a reference book for the general practitioner. Great stress is laid upon the value of consultations between the dentist and the physician in cases of systemic disease related to oral conditions.

The book contains thirty-four chapters. The first five chapters deal with oral examination. Stress is laid upon careful study of the history of the patient, which is so often overlooked by the dentist. The roentgen method, transillumination and bacteriologic examination receive their proper place.

Chapters 6-12 take up disorders of the tooth tissues: the dentine, the occlusion, the disturbances of eruption and the chemistry and abnormal conditions of the saliva.

Chapter 13 takes up the diseases of the gingivae and periodontoclasia (pyorrhoea alveolaris).

Chapters 14, 15 and 16 treat of the infections of the dental pulp and the periapical tissues. These conditions of most importance from the point of view of focal infection might well have received more elaboration especially from the point of view of microscopic pathology. In connection with diagnosis of such dental infections the author lays considerable stress on the value of the electric vitality

test. This seems very misleading in view of the fact that a pulp may give a positive reaction to the electric tester in such a condition as chronic pulpitis and yet may be a most potent focus of infection.

Chapters 17-27 take up specific diseases: Infections of the floor of the mouth and neck, diseases of the sensory and motor nerves of the jaw, diseases of the lips and tongue of the throat of the salivary glands and the maxillary sinuses. Chapter 27 is dedicated to stomatitis and contains perhaps the most complete and careful collection of mouth diseases. This chapter alone makes the book an invaluable addition to the reference library of the diagnostician.

Chapters 28-30 deal with the diseases of injuries and fractures of the maxillary and mandibular joints and Chapters 31 and 32 give an excellent description of the many oral tumors and cysts.

Chapters 33 and 34 deal with a discussion of oral infections, both the acute and the chronic type as related to systemic disturbances. The author favors extraction of the infected teeth. Treatment of infected teeth through the root canal should be undertaken only in those cases where the patient is in good health.

The author states in a preface that he has endeavored to give the results of his own experience and observations rather than to quote from the writing of others. A list of references however is given at the end of each chapter. The book has been profusely illustrated with microphotographs and roentgen pictures of excellent quality. The photographs and especially the colored reproductions of the various diseases should receive more than casual mention. They are a veritable clinic of exceptional teaching value. The publisher should be congratulated on the splendid production of the book.

#### BOOKS RECEIVED FOR REVIEW

*Transactions of the American Gynecological Society*, Volume 52 For the Year 1927. Edited by Floyd E. Keene, M.D. Published by the C. V. Mosby Co. 277 Pages.

*Physical Diagnosis* by W. D. Rose, M.D. Published by the C. V. Mosby Company. 819 Pages.

*Strabismus: Its Etiology and Treatment*, Oscar Wilkinson, A.M., M.D. Published by the C. V. Mosby Company. 240 Pages.

*Gynecology For Nurses* by Harry S. Crossen, M.D. Published by C. V. Mosby Company. 281 Pages.

*Studies From The Rockefeller Institute For Medical Research* Volume LXIII. Published by The Rockefeller Institute For Medical Research. 626 Pages.

*Special Cytology* 2 Vols. by Edmund Cowdry. Published by Paul B. Hoeber. 1348 Pages.

*Lobar Pneumonia* by L. R. Sante. Published by Paul B. Hoeber, Inc. 137 Pages.

*Clinical Aspects of the Electrocardiogram* by Harold E. B. Pardee. Published by Paul B. Hoeber, Inc. 242 Pages.

*Cardiac Arrhythmias* by Irving R. Roth. Published by Paul B. Hoeber. 210 Pages.

*Health Record for Women*, by J. Thomas Hunter. Published by the Williams & Wilkins Company. 64 Pages.

*The Newer Knowledge of Bacteriology and Immunology* by Edwin O. Jordan and I. S. Falk. Published by The University of Chicago Press. 1196 Pages.

4—*Report of the Committee on Survey of Incidence of Puerperal Septicemia in Massachusetts, 1927*

By Dr Charles E Mongan, Surgeon to the Somerville Hospital, Somerville

Discussion opened by Dr Frederick J Lanch, Instructor of Obstetrics Tufts College Medical School and Assistant in Gynecology at Harvard Medical School

TUESDAY AFTERNOON, JUNE 5, 2 30 O'CLOCK

Large Dining Room Mezzanine Floor  
Hotel Bancroft

SECTION OF TUBERCULOSIS

Officers of the Section

Dr John B Hawes, 2d Boston. *Chairman*  
Dr Walter A. Griffin, Sharon, *Secretary*

General subject *Getting the Consumptive Back on the Job*

1—*The Story of the Altro Work Shops*

By Mr Edward Hochhauser President Altro Work Shops 1021 Jennings Street, New York, N Y

2—*The Place of the Industrial Colony*

By Dr Bavard T Crane Superintendent Central New England Sanatorium, Rutland

3—*The Work of the Placement Committee of the Boston Tuberculosis Association*

By Dr Harry Linenthal, Chairman of Placement Committee of the Boston Tuberculosis Association

Discussion opened by Dr Robert S Quimby, Hood Rubber Company, Watertown, Mass, Dr Ernest B Emerson, Superintendent Rutland State Sanatorium, Rutland, Mass, Dr Carl C MacCorison, Superintendent North Reading State Sanatorium, North Wilmington Mass, Dr W Irving Clark, Norton Company, Worcester, Mass

TUESDAY EVENING, JUNE 5, 8 O'CLOCK

Ball Room, Hotel Bancroft

THE SHATTUCK LECTURE

By Dr Evarts A. Graham Professor of Surgery Washington University School of Medicine St Louis, Missouri

Subject *Some Functional Tests and Their Significance*

Following the lecture there will be a vaudeville entertainment or moving pictures, with light refreshments

WEDNESDAY MORNING, JUNE 6, 9 O'CLOCK

Large Dining Room, Mezzanine Floor

Hotel Bancroft

SECTION OF MEDICINE

Officers of the Section

Dr William R Ohler, Boston. *Chairman*  
Dr Albert E Parkhurst, Beverly, *Secretary*

PNEUMONIA

1—*Clinical Observations of Pneumonia*

By Dr F Dennette Adams Boston

Discussion by Dr Roger I Lee, Boston, and Dr William H Robey, Boston

2—*Care of the Heart in Pneumonia*

By Dr George M. Albee, Worcester

Discussion by Dr Burton E Hamilton, Boston, and Dr Lester C Miller, Worcester

3—*Treatment of Empyema*

By Dr Horace Binner, Boston

Discussion by Dr Edwin A. Locke, Boston, and Dr Ernest L Hunt, Worcester

4—*Recent Advances in the Scientific Treatment of Pneumonia*

By Dr Russell L Cecil, Bellevue Hospital, New York, N Y

Discussion by Benjamin White, Ph D, Boston, and Dr Frederick T Lord, Boston

WEDNESDAY MORNING JUNE 6, 9 O'CLOCK

Main Hall, Chamber of Commerce Building

SECTION OF RADIOLOGY AND PHYSIOTHERAPY

Officers of the Section

Dr Frederick W O'Brien, Boston, *Chairman*  
Dr William D McFee, Haverhill, *Secretary*

1—*Relation between Histologic Structure and Prognosis in Cervical Carcinoma under Radiation Treatment*

By Dr Max Cutler, Memorial Hospital, New York N Y

Resume This study is based upon an analysis of two hundred cases of carcinoma of the cervix treated four and five years ago. Histological material was available in every case. All patients were treated by radiation alone. A comparison of the structure with the clinical course of the disease, the response to radiation, and the final result

Discussion opened by Dr George A. Leland, Huntington Hospital, and Dr Frederick L Good, Boston City Hospital, Boston

2—*Physical Therapeutics in Pneumonia*

By Dr Byron Sprague Price, New York, N Y

Discussion opened by Dr Edwin A. Locke, Boston City Hospital, Dr Frank Granger, Boston City Hospital, Dr Edwin T Wyman, Children's Hospital, Boston



The Worcester Local Committee has arranged with the two local Golf Clubs to permit Fellows of the Society to play on their links at any time during the two days of the meeting. Golf tickets will be issued at the Bureau of Information. It is to be noted that the eighteen hole links of the Worcester Country Club are among the finest in the country.

TUESDAY MORNING, JUNE 5, 9 O'CLOCK

Main Hall, Chamber of Commerce Building

#### SECTION OF SURGERY

Officers of the Section

Dr Frederick B Sweet, Springfield, *Chairman*  
Dr Walter C Seelye, Worcester, *Secretary*

##### 1—*Surgery of the Gall Bladder*

By Dr John F Erdmann, New York, N Y  
Discussion opened by Dr Philemon E Truesdale, Fall River

##### 2—*Surgery of the Bile Ducts*

By Dr Frank H Lahey, Boston  
Discussion opened by Dr Michael F Fallon, Worcester

##### 3—*Sequelae and Accidents of Biliary Surgery*

By Dr Edward Starr Judd, Rochester, Minnesota  
Discussion opened by Dr Charles A Porter, Boston

##### 4—*Pancreatic Complications of Biliary Disease*

By Dr Daniel F Jones, Boston  
Discussion opened by Dr William J Mixer, Boston

##### 5—*Biliary disease from the Medical Point of View*

By Dr Franklin W White, Boston  
Discussion opened by Dr Frederick T Lord, Boston

TUESDAY MORNING, JUNE 5, 9 O'CLOCK

Large Dining Room, Mezzanine Floor  
Hotel Bancroft

#### SECTION OF PEDIATRICS

Officers of the Section

Dr Kenneth D Blackfan, Brookline, *Chairman*  
Dr Joseph Garland, Boston, *Secretary*

##### *Serums and Vaccines in the Prevention and Treatment of Diseases of Children—A Critical Review*

By Benjamin White, Ph D, Director of the Antitoxin and Vaccine Laboratory, Jamaica Plain

Resume Improvements in the preparation and use of serums and vaccines are discussed, with special reference to accepted procedures for vaccination against small-pox and active immunization against

diphtheria. The results following the antitoxic treatment of scarlet fever and erysipelas are presented, along with a discussion of the present status of the Dick test, of active immunization, against scarlet fever, of whooping cough vaccine, and the advantages, limitations, and disadvantages of other serums and vaccines.

Discussion by Dr Francis P Denny, Health Officer of Brookline, Dr Richard M. Smith, Boston, and Dr Oliver H Stansfield, Worcester

TUESDAY MORNING, JUNE 5, 11 30 O'CLOCK

Ball Room, Hotel Bancroft

#### ANNUAL MEETING OF THE SUPERVISING CENSORS

TUESDAY NOON, JUNE 5, 12 O'CLOCK

Ball Room, Hotel Bancroft

#### ANNUAL MEETING OF THE COUNCIL

Programs of the business to be transacted will be sent to Councilors on May 29

TUESDAY AFTERNOON, JUNE 5, 1 30 O'CLOCK

Ball Room, Hotel Bancroft

#### THE COTTING LUNCH AND BUFFET LUNCHEON FOR FELLOWS

TUESDAY AFTERNOON, JUNE 5, 2 30 O'CLOCK

Main Hall, Chamber of Commerce Building

#### SECTION OF OBSTETRICS AND GYNECOLOGY

Officers of the Section

Dr Foster S Kellogg, Boston, *Chairman*  
Dr Frederick L Good, Boston, *Secretary*

##### 1—*The Problem of the Occiput Posterior Position*

By Dr Arthur H Bill, Professor of Obstetrics, Western Reserve University School of Medicine, Cleveland, Ohio

Discussion opened by Dr Frederick C Irving, Assistant Professor of Obstetrics, Harvard Medical School

##### 2—*The Benign Lesions of the Uterine Cervix and Their Treatment*

By Dr Louis E Phaneuf, Professor of Gynecology, Tufts College Medical School

Discussion opened by Dr Frank A Pemberton, Assistant Visiting Physician, Free Hospital for Women, Brookline

##### 3—*Premature Separation of the Normally Implanted Placenta*

By Dr Joseph W O'Connor, Visiting Obstetrician, Memorial Hospital, Worcester

Discussion opened by Dr Thomas Almy, Obstetrician to the Union Hospital, Fall River

## HISTORICAL REFERENCES TO WORCESTER

SEVENTY-SEVEN years ago the Massachusetts Medical Society held its annual meeting in Worcester. This was the first annual meeting to be held outside of Boston after its organization in 1781. Then there followed meetings in Pittsfield in 1852, Fitchburg in 1854, Springfield in 1855, New Bedford in 1857, and again in Pittsfield in 1863.

No more meetings were held outside of Boston until the year 1923, since when Pittsfield, Swampscott and Springfield have been honored. There is no record of the meeting place in Worcester.

It may be of interest to recall one of the influences that had to do with the establishment of district societies. Associations for the reporting of interesting cases unconnected with the State Society were being formed in various places, the Boston Medical Society even antedating its foundation by some 46 years.

Probably very few of the present fellows realize that when the Massachusetts Medical Society was formed in 1781 its membership was limited to seventy by law. This limit continued for some time and, as might be expected, membership was made up largely from physicians in and around Boston.

This may have been due in part to the limited membership, but probably also to the fact that travelling and communication in those days were so inconvenient and took so much time that physicians in the western part of the State did not derive much benefit from membership in the Society even if they had an opportunity to join, which may be doubted.

In 1794, thirteen years later, Worcester County was represented in the Society by one person, Israel Atherton of Lancaster.

So in 1794 the physicians of Worcester and Hampshire got together and formed the Worcester Medical Society, and petitioned the legislature for articles of incorporation. This action met with opposition from the Massachusetts Medical Society.

By charter the Massachusetts Medical Society was empowered to examine all candidates desiring to practice medicine and if found qualified, to recommend them for license. The Society was jealous of this right and naturally desired no rival with equal powers, in any other part of the State. The petition of the Worcester Society was discussed and disputed for some years until finally the plan of having district societies was adopted and the State (which then included Maine) was divided into four districts, the Eastern, Middle, Southern and Western. The Western was made up of Worcester, Hampshire and Berkshire.

It was in 1803 that these districts were decided upon and at the same time the limit on membership was raised and soon abolished. The Western district, if it ever was in actual existence, must have been very short lived, for

the very next year the "Worcester District Society" was incorporated (1804), and 1807 the Berkshire District was also incorporated.

Apparently this infant of the State Society was well developed and nourished at birth, and has continued lusty and hearty ever since as it has kept in existence without missing its meetings for 124 years.

As stated in the program prepared by the Secretary the meetings this year are to be held in the Hotel Bancroft and in the adjoining Chamber of Commerce Building. These two buildings face on Franklin Street, and overlook the old "Common" which is in the very centre of Worcester's business life.

In this Common is one of the oldest burying grounds in the City, but nothing of it shows as many years ago all the stones were placed flat a foot or two below the surface and the whole area grassed over.

More interesting, and certainly more visible, is the monument to Colonel Timothy Bigelow, whose life story is so interesting and with such a touch of sadness in it that a short sketch of it may not be amiss.

He was a blacksmith by trade, active in the feverish days before the Revolution. It is said that he was so ardent a patriot that he would refuse to shoe any horse belonging to a man with Tory leanings.

He was Captain of the local militia, and when the call came for men after the battles of Lexington and Concord led his company of 76 to take part in the siege of Boston. While on this service he was made a Major. He joined Arnold's expedition against Quebec, which tried to reach that town by a route through the forests of Maine and Canada. En route, he climbed a certain mountain for reconnoitering, and that mountain now bears the name of this old Worcester patriot. Everyone who has hunted or fished in that region (not far from Rangleev) well knows where Bigelow Mountain is.

He was taken prisoner on this trip. Just how he was freed from bondage does not matter here, but he next appears as a Colonel in command of a regiment at Saratoga. Later again he was with Washington at Valley Forge and at West Point. He evidently stayed in service during the entire war. Three events of his later life may be mentioned: (1) It is said that he founded and named the present capitol of Vermont, Montpelier. (2) He was at one time in command at the State Arsenal at Springfield. (3) He never was a thrifty man, and ended his days in a debtor's prison, dying one month after being placed there.

The City Hall stands on the "Common", facing Main Street and directly in front of the entrance, set in the stone is a star, and beneath this star a tablet with the following inscription: "This star marks the spot where the Declaration

3—*Practical Points from Pyelography*

By Dr Douglas J Roberts, Hartford, Conn  
Discussion opened by Dr Bernard Spillane,  
Urologist to the Hartford Hospital, Hart-  
ford, Connecticut, and Dr Merrill C  
Sosman, Peter Bent Brigham Hospital,  
Boston

4—*Osteochondritis Luetica and the Analogous  
Zones in Rickets and Infantile Scurvy*

By Dr Ralph S Bromer, Children's Hospital,  
Philadelphia, Pa

Discussion opened by Dr Philip H Sylvester,  
Children's Hospital, Boston and Dr  
Charles F McKhann, Children's Hos-  
pital, Boston

5—*Electrothermic Methods in Surgery*

By Dr Edwin N Kime, Indianapolis, Indiana,

Résumé (1) Proper technic in the use of  
damped and undamped high frequency  
currents (2) Electro-desiccation and  
electro-coagulation, surgical pathology,  
and clinical applications of each (3)  
The advantages and disadvantages of  
electrothermic methods as utilized by the  
general surgeons and specialists in various  
fields (4) Illustrations by moving pic-  
tures and lantern slides

Discussion opened by Dr Halsey B Loder,  
Boston City Hospital, Boston

WEDNESDAY NOON, JUNE 6, 12 O'CLOCK

Main Hall, Chamber of Commerce Building

## ANNUAL MEETING OF THE SOCIETY

*Business of the Annual Meeting*

A draft of the Revised By-Laws has been sent  
to every Fellow, under the terms of Chapter IX

WEDNESDAY AFTERNOON, JUNE 6, 12 30 O'CLOCK

## THE ANNUAL DISCOURSE

By Dr Walter B Cannon, George Higginson  
Professor of Physiology, Harvard Medi-  
cal School

Subject *The Mechanism of Emotional Dis-  
turbance of Bodily Functions*

WEDNESDAY AFTERNOON, JUNE 6, 1 30 O'CLOCK

Ball Room, Hotel Bancroft

## THE ANNUAL DINNER

Fellows desiring to sit together will please  
send their names to the Local Chairman of Ar-  
rangements, Dr A W Marsh, 690 Main Street,  
Worcester, at the earliest possible date, and the  
proper reservations will be made

*Be sure to get your dinner tickets early at the  
Bureau of Information*

## MEETINGS OF THE COUNCIL

*The Annual Meeting, Tuesday, June 5, 1928,  
12 noon, in the Ball Room, Hotel Bancroft, Wor-*

*cester* Other stated meetings in John Ware  
Hall, Boston Medical Library, at noon, on the  
first Wednesdays of October and February

## CENSORS' MEETINGS

The Censors for the several districts will meet  
for the examination of applicants for fellowship  
on the first Thursdays of May and November

The Censors for the Suffolk District will ex-  
amine applicants residing in that district and  
also applicants who are non-residents of Massa-  
chusetts

Applicants for fellowship should apply to the  
Secretary of the District Society of the district  
in which they reside (have a legal residence) at  
least one week before the date of a given exam-  
ination, taking with them their diplomas

## TREASURER'S NOTICE

*Assessments should be paid to District Treas-  
urers, or, in the case of non-residents, to the  
Treasurer*

Assessments were due January 1st For the  
convenience of Fellows who have been unable to  
pay, assessments will be received for the Treas-  
urer at the annual meeting

1927-1928

## OFFICERS OF THE SOCIETY

JOHN M BIRNIE President

14 Chestnut Street, Springfield

THOMAS J O'BRIEN Vice-President

501 Beacon Street, Boston

WALTER L BURRAGE Secretary

182 Walnut Street, Brookline

ARTHUR K STONE Treasurer

Auburn Street, Framingham Center

W T SHERMAN THORNDIKE

Chairman Committee of Arrangements  
24 Marlborough Street, Boston

ARTHUR W MARSH

Local Chairman of Arrangements  
690 Main Street, Worcester

## SECRETARY'S NOTICE

All communications as to membership, espe-  
cially changes of residence and address, should  
be sent to the Secretary, who keeps a constantly  
corrected official list of the Fellows and their  
addresses

The Annual Directory, distributed to all Fel-  
lows in January, should be consulted for in-  
formation about the Society

## THE JOURNAL

The NEW ENGLAND JOURNAL OF MEDICINE, the  
official weekly organ of the Society, will be sent  
only to Fellows who have paid their assessments,  
and to such Honorary and Retired Fellows as  
may apply for it Address communications to  
the Managing Editor of the JOURNAL, Dr W P  
Bowers, 126 Massachusetts Avenue, Boston

of Independence was first read in New England" etc This is where the meeting house (later the Old South Church) stood, and from the top of the porch Isaiah Thomas read the Declaration

The site of the hotel itself has a historical interest in that in 1755 John Adams, second President of the United States came to Worcester as a pedagogue and boarded in the family of a Dr Nahum Willard, whose house stood on the spot where the hotel now stands Adams, having access to the doctor's library, became so interested in medical matters that it is said that he nearly threw up his career as a teacher to study medicine Dr Willard was a rank Tory (later driven from Worcester), and if they ever discussed current events, feeling must have run high

Later on this site was occupied by the first Methodist Church in Worcester, and when that body built a larger church elsewhere, the French Catholics bought and occupied the edifice until it was destroyed by fire some twenty-five years ago

The present Hotel Bancroft now occupies this same site with its front on Franklin Street, extending on Portland Street to the next street, Federal The Chamber of Commerce Building stands next to the Hotel and the two corporations have arranged a passage from one to the other without being obliged to go out of doors

The name "Bancroft" has a local significance which may be of interest to the fellows who visit Worcester next June We have the Bancroft Hill the Bancroft Tower A number of local concerns have taken the name of Bancroft

About two miles from the Hotel in the direction of Holden, stands a stone bearing a tablet with the following inscription "Twenty feet to the east of this stone stood the house in which George Bancroft, Historian of America, son of Aaron and Lucretia (Chandler) Bancroft was born October 3rd, 1800"

It may not be out of place here to give a few facts concerning George Bancroft his life and what he did He lived as a boy in Worcester, graduated from Harvard at the age of seventeen He was the son of a clergyman and inherited from his father those traits for study and capacity for work which he later displayed

After graduating from Harvard he went to Europe for further study, but at that early date had decided to make history his special work He studied in Berlin Jena Gottingen and Heidelberg, returning to America in 1822

In 1834, twelve years later, the first volume of his 'History of the United States' appeared but the last and tenth not until 1874, forty years later It is hard to conceive of the amount of reading study and work he must have put into developing this History which covered the greater part of his working days At his death and by his wish, his library was offered to the Congress of the United States Rich in historical manuscripts, it would have been a great

addition to the Congressional Library, but after delay and dilly-dallving, the trustees sold it to the Lenox Library in New York for over \$100,000

Aside from his work as an historian, he was a member of President Polk's cabinet, and later represented the United States at the Courts of St James and Berlin During his ministry at these two courts, two important diplomatic disputes were settled (1) The dispute over the Northwestern boundary line between Canada and the United States which called forth the famous campaign slogan "Fifty-four forty or fight" (2) The dispute between England and this country over the former's claim that no emigrant from Great Britain and Ireland could throw off his allegiance to the mother country and become a citizen of the United States a point that England up to this time had refused to concede

George Bancroft died at Washington at the ripe old age of ninety-one

While in Worcester, if one cares to one can get a splendid view of the city and surrounding country from the top of the Bancroft Tower, which stands on the hill of the same name at the foot of which is the stone that marks the site of the historian's birthplace

It is fitting then, that the name of Bancroft should be given to Worcester's largest and most modern hotel, and the committee of arrangements after having looked over the ground, are satisfied that not only is there ample space to carry on the section meetings and other activities of the program, but that those who come prepared to stay over-night will find every comfort and convenience for their personal requirements

The Bancroft is one of the chain of foremost hostleries in the United States and Canada under the direction of the United Hotels Company of America, a chain which includes such nationally known hotels as the Roosevelt in New York, the Benjamin Franklin in Philadelphia, the Ten Eyck in Albany, the Onondaga in Syracuse, and the Mount Royal in Montreal

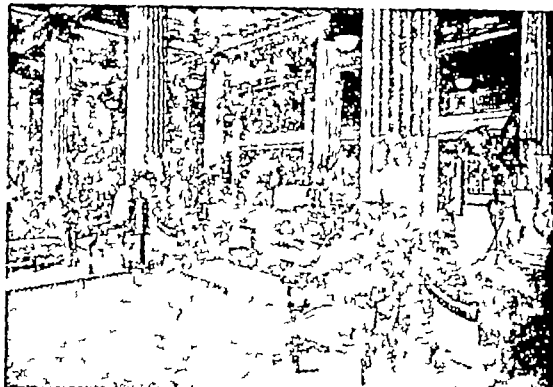
The Bancroft has five hundred rooms, each equipped in the most modern, hygienic and comfortable manner

Mr Roy L Brown the manager of the Hotel, and his assistant, Mr George Leonard have been most attentive to the committee and have shown themselves desirous of helping to make this meeting a success

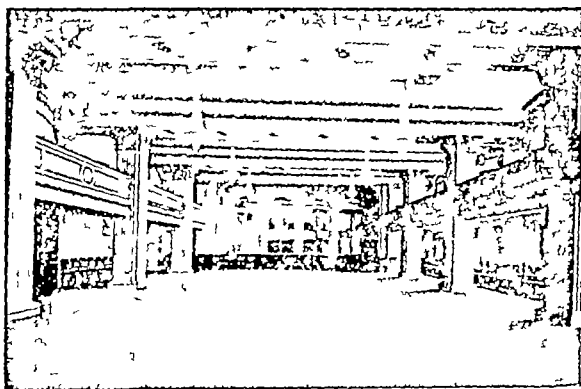
Back of the lobby, which one enters either from Franklin or Portland Streets, is the large ball room where it is proposed to hold the Council meeting Tuesday noon, the luncheon immediately to follow, to which every member of the Society is invited the Shattuck lecture and entertainment Tuesday evening and the annual dinner Wednesday noon From the gallery of the Ball Room one steps to the Mezzanine Floor, on which are a series of smaller banquet rooms In numbers 1 and 2 with a seating capacity of



THE BANCROFT WORCESTER MASS  
Under the direction of the United Hotels Company  
of America



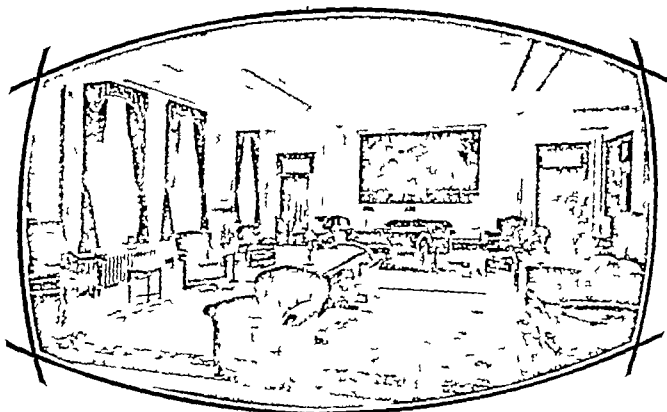
THE BANCROFT LOBBY  
Stairway leads to Chamber of Commerce entrance



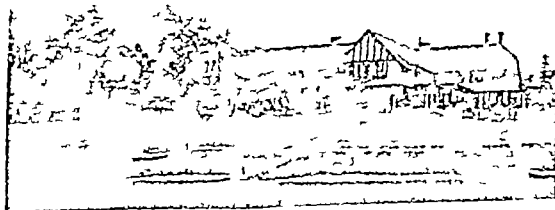
BANQUET HALL AND BALLROOM THE BANCROFT



THE MAIN DINING ROOM  
OF THE BANCROFT



CHAMBER OF COMMERCE LOBBY



WORCESTER COUNTRY CLUB

# CLINIC AT THE BOSTON CITY HOSPITAL\*

## PLANS AND PROGRESS OF THE BOSTON CITY HOSPITAL†

BY JOHN J. DOWLING, M.D.

TEN years ago the total appropriation for maintenance for this Hospital was approximately \$867,000. The appropriation for maintenance for the past year was \$2,100,000.

Ten years ago there were admitted 20,753 patients at an average per capita cost per day of \$2.41. This year there will be admitted over 26,000 patients, at a per capita cost of approximately \$4.80 a day.

Ten years ago the Trustees of the Hospital were fully alive to the fact that the Hospital must be enlarged and had developed a program, a part of which has already been accomplished. It was seen that the demand for beds would increase but no one could foresee the very rapid increase in the need for beds that followed just after the war and has continued to this time. This has resulted in a great deal of overcrowding of our wards. Happily, this condition will be overcome before next winter with the completion of the new surgical and medical pavilions.

Ten years ago the Trustees definitely decided to expend the Thorndike Fund for the construction of a building to be devoted to research and to build it on the site of old Ward P. Plans were drawn at that time but, because of the war, construction was delayed. It has now been functioning for five years and under the direction of the late Dr. Francis W. Peabody, its fame has spread throughout the medical world. The cost of constructing and equipping this building was approximately \$500,000.

Ten years ago the Out-Patient Department was very inadequately housed in the old Out-Patient Building and in the Entrance Lodge. It was exceedingly crowded at all times almost indecently so male and female patients being crowded together, and so the Trustees decided that the most important need at that time was the construction of a new Out-Patient Department. Ten years ago 130,000 visits were made to our Out-Patient Department. In our new Out-Patient Department we are averaging about 900 visits a day, and the statistics I am sure, will show that approximately 250,000 visits will have been made during this year to the Out-Patient Department. The building is seven stories high, and was so constructed as to give the maximum of privacy to patients consistent with good care. The unit system of records was installed. This new Out-Patient Department will easily care for more than twice the number of patients resorting there for treatment at the present time. The cost of constructing and equipping this building was \$665,594.15.

The demand for beds having become very acute four years ago the Trustees went to Mayor Curley and the City Council and applied for \$3,000,000 to be expended on the plan which they presented and which is now being developed. The money was granted and, as a result, the following buildings have either been finished or are under construction or plans have been drawn for the same.

The old maternity department started in a very small way about ten years ago became so overcrowded that we were unable to care for the Boston cases applying. Because of the crowding of the wards and the continual danger of cross infection it was decided that beds for expectant mothers were our greatest need and so the first building constructed under this three million dollar grant was the Maternity Building which stands at the corner of Albany and Concord Streets. This contains six stories and a basement. The top floor is devoted to admission baths, case rooms, delivery rooms, operating rooms and several isolation rooms for the care of patients suffering from uremic convulsions. Three floors each contain twenty-six maternity beds, nurseries and isolation rooms both for mothers and babies. The beds for mothers and babies are in cubicles, so that the danger from cross infection is believed to have been reduced to a minimum. Two floors contain twenty-six beds each for gynecological cases, isolation rooms, dressing rooms, etc. On every other floor a small ward laboratory has been installed.

With the increasing number of beds, it was obvious that more nurses would be needed, so the Trustees determined that the next building necessary was an addition to the Nurses' Home. A wing containing 125 beds has been constructed, and is now occupied by the nurses. The old Vose House has been remodelled and a new elevator installed. There are modern class rooms, laboratories, a model ward and all things necessary for the teaching of modern nursing. As a luxury we constructed a swimming pool 45 feet long, which has added greatly to the happiness of the nurses.

On the site of Wards W and X a new surgical pavilion of eight stories and basement is now being constructed. The basement will house the indoor department of Electrotherapeutics and a large plaster room. The first floor will take the place of the present accident wards, and will contain three small wards—male, female and children's. On the same floor there will be two 3-bed shock rooms with a small operating room between for transfusions. The seven stories above will each contain a twenty-eight-bed ward and rooms which may be used

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†For record and address of author see "This Week's Issue" page 775.

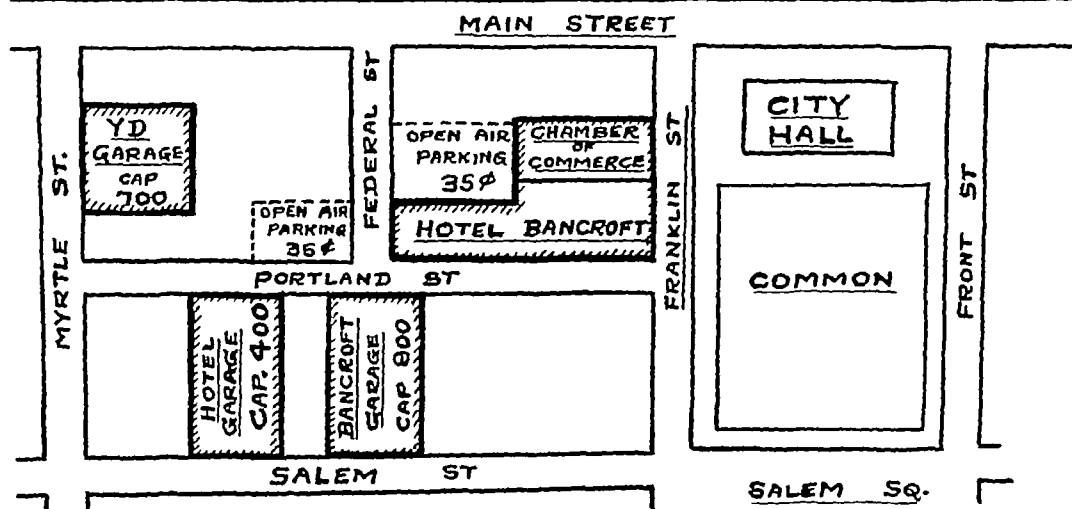
200, the Sections on Medicine, Tuberculosis and Pediatrics will meet. The other rooms will be given over to the exhibitors.

From the Mezzanine Floor one also can pass directly into the Chamber of Commerce Building, where the registration desk will be and the bureau of information maintained by the committee of arrangements. Then by passing down one flight, either by lift or stair one immediately enters the other large hall where the Sections on Surgery, Gynaecology, Obstetrics, and Radiol-

There is no street in the vicinity of the Hotel where parking of cars is allowed for more than thirty minutes, but in the rear of the Hotel is a large parking space, and as the accompanying diagram will show there are three large modern garages within a minute or two walk of the Hotel.

For those who want to play golf, the committee would suggest as the best time the afternoon of Wednesday, after the annual dinner.

The evenings are long and there is plenty of



ogy and Physiotherapy will meet. The annual business meeting will be held and the annual oration given in this hall.

Located near the center of the State, easily reached by train or over good roads from any direction by auto, and with what seems to us an unusually attractive program, it would seem as though the stage was set for a good time in Worcester this year.

time for an eighteen hole game. Those who wish to play should notify Dr F W George, 11 Ashland Street, or Dr E H Trowbridge, 36 Pleasant Street.

If there are players who would like to arrange two somes or four-somes, or if a single player would like a companion, a notice to either of these men will suffice.

ical treatment failed to affect over a period of two months. The operation was followed by a profuse hemorrhage and he died in five days of bronchopneumonia. There has been no other case of bronchopneumonia and very few of post-operative hemorrhage.

Here is a case of failure. A girl of twenty had a partial tonsillectomy without relief. We found tonsillar remains which were removed without benefit.

Occasionally the joints have been made worse for a few days and have then subsided—the process apparently being ended. I make it a practice to always tell patients who are having tonsillectomy performed for rheumatism that there may be an active process induced, but I have never found that it was of importance or of more than a few days' duration. If you do not say that, the patient is disappointed, should such an event occur.

We have stopped chorea in two very bad cases which had resisted arsenic and salicylates for five and six weeks. In the first case the process had entirely ceased in five days and in the second in eleven days.

We have found that tonsillectomy in these cases is as safe as any other surgical procedure, and we can see no difference, as far as the operation is concerned, between cases operated on during the height of rheumatic fever and interval operations. It has the following advantages: (1) It reduces the risk to the heart, (2) It ends the acute suffering, (3) It is of great economic value to the patient because he is able to get back to his work sooner and (4) It is of economic value to the hospital because these patients are able to leave much sooner and, therefore, reduce the expense per patient and also give us the use of the bed for the next patient.

## SUPPURATIVE DISEASES OF THE LUNGS\*

BY HORACE BINNEY, M.D., F.A.C.S.I.

IN my remarks on suppurative diseases of the lungs I shall confine myself to brief reference to a few of the newer phases of the subject and to mentioning a few personal experiences, chiefly with cases at this Hospital.

**Etiology.** As to causation of abscess following operation upon the upper air passages, the theory of aspiration has, until recently, been regarded as generally applicable, rather than the theory of embolism. The fact that, in several series of abscesses after tonsil and adenoid operations, the proportion of cases following general anaesthesia is much larger than that following local anaesthesia is considered as proof of this point. It must be admitted, however, that the great majority of these operations are done in young children where local anaesthesia is impossible. Therefore, a comparable number of cases done under local anaesthesia must be studied, before the statistics can be of much value. Recent experimental work, by Cutler and Schlueter, seems to favor the embolism theory. They were able to produce lung abscess in all cases, using dogs and causing bacterial emboli by a special technique. They also point to the fact that experimental attempts to produce aspiration abscess have almost invariably failed. The question must be regarded as still unsettled.

**Pathology.** The best recent description of the pathology in bronchiectatic disease is by Aschner, who studied specimens from a number of lobectomy operations performed by Lilienthal. He classifies the conditions found as follows: (1) bronchiectasis, (2) bronchiectatic abscess, (3) suppurative pneumonitis and (4) extra-bronchial abscess. Oftentimes these groups over-

lap, there being a combination of lesions. Gangrene may, apparently, develop in any one of them, if anaerobic bacteria are present and the patient's resistance is poor.

**Spirochaetal Infection.** The occurrence of this form of infection was emphasized by Kline and Berger in 1925, and 15 cases were reported of which 5 were moribund, 5 severe and 5 mild. The latter 10 cases responded to arsphenamin, and recovered in a striking manner. My experience is limited to 2 cases—the first, a man of 55, who following a mild influenzal attack, developed signs of bronchiectatic abscess. The X-ray gave a typical picture of a localized process in the upper right lobe. There being no large cavity and symptoms not urgent, operation seemed contraindicated at the time of my examination. Later spirochaetes were found in the sputum and treatment with arsphenamin was followed by rapid recovery. Of a few cases in the hospital examined for spirochaetes, only one was positive, that being a mild case showing very few organisms, and recovery took place without specific treatment. I believe the staining of the sputum for these organisms should be a routine procedure except, perhaps in obvious cases of large abscess cavities requiring drainage. Kline showed that the origin of the pulmonary infection was often pyorrhea or carious teeth. Material from these sources contained many Vincent's spirochaetes and fusiform bacilli, which, injected into traumatized tissue in guinea pigs, caused death from gangrene.

**Lipiodol.** This preparation was introduced into surgery by Sicard and Forestier in 1921, and its value in demonstrating pathology in the lungs was shown by Sergeant and Cottenot in 1925. Since then, many surgeons and laryngologists have employed it, chiefly to map out

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†For record and address of author see "This Week's Issue," page 725.



for isolation or private rooms This building will be finished and ready for occupancy in August or September of next year

A contract has been awarded for the enlargement of the power house, to carry the increased load

Old Wards Q, R and S and the service portion of F, G and H are now being demolished, and a contract has been awarded for the construction of a House Officers' Building to contain 125 rooms This will be on a par with any such building in the country, and will contain, besides bed-rooms, a dining room, reading rooms, two squash courts, and a swimming pool 65 feet long

In the space provided by the demolition of Wards Q, R and S, which will be partly occupied by the House Officers' Building, a new Medical Pavilion of nine stories will be started in the early spring

Contracts will soon be awarded to enlarge the laundry, dining rooms and kitchens for the various grades of employees

The buildings I have just mentioned were provided for by the three million dollars already allowed, but the Trustees earnestly desire, not only to provide for the present needs of the Hospital, but to anticipate its ultimate growth on the present site, and have drawn tentative plans to that end and have already requested His Honor, Mayor Nichols, to provide three million dollars more for the following purposes —

On the plot now occupied by the present operating floor, Wards B, C and D, accident floor

and casualty wards, to construct a new U shaped eight-story building, to contain accident wards and offices for the admission and discharge of patients and on the top floor operating rooms for general surgery, eye, ear, nose and throat, and neuro-surgery This building would be large enough to house all surgical patients applying to this Hospital for treatment now, and for some years in the future

On Harrison Avenue to construct a new Administration Building—the first floor for the admission of friends of patients and all persons having business with the Hospital, and, for the various offices in connection with the administrative work of the Hospital The second floor to contain record room, library, Trustees' Room, and such offices as are not provided for on the first floor From this building tunnels would connect with both the medical and surgical sides

On Massachusetts Avenue to construct a private pavilion of about 125 beds

On the site of the present Pathological Building, to construct a new Pathological Laboratory four stories high

On the corner of Harrison Avenue and Northampton Street, on the grounds of the South Department, to construct a new measles pavilion, and to remodel the older South Department buildings

This year the Boston Sanatorium of 400 beds was transferred to the Hospital Department, and we are now preparing plans for a new building that will contain 120 beds for incipient tuberculosis

## THE EFFECTS OF TONSILLECTOMY ON THE ATTACK OF ACUTE RHEUMATIC FEVER\*

BY WILLIAM H. ROBEY, M.D.†

THE interest in cardiology has steadily increased in the last twenty years, and great progress has been made, especially in the last ten The electrocardiograph has contributed to the elucidation of many of the rarer types of arrhythmias and has been able to show us such conditions as bundle branch block, which formerly could not be recognized clinically It has also shown us many interesting and rare findings—some of which have been of prognostic value, while others have been of mere academic interest The practitioner of medicine should train himself to recognize the various cardiac findings, which he can do in the great majority of cases, using instruments merely as a check All of this work is in the line of treatment of heart lesions What we desire most is the prevention of heart disease

At a meeting of cardiologists recently in New York the fear was expressed that we are in a hopeless state concerning prevention

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†For record and address of author see "This Week's Issue" page 775

In an effort to prevent heart disease in cases of acute rheumatic fever we have performed tonsillectomy in about seventy-five cases during the time of the joint activity and fever Most of these cases have had sodium salicylate before their entrance to the hospital, and none have been operated upon until we have satisfied ourselves that the tonsils harbored the focus of infection and have proved to our own satisfaction that the ordinary medical treatment has failed We have had many successes and a few failures Here is the case of a woman of forty-four with painful joints and fever for three weeks For a day or two the fever would subside and the joints become less painful, and we would conclude that our medical treatment was successful This condition went on for four or five weeks and it was not until tonsillectomy was performed that the process quieted down and remained so

In the seventy-five cases which we have operated upon there was but one death—a man of fifty-eight who had tender wrists and whom med-

in the literature to find that Raymond Vieussens had done this. Thebesius had also made the same observations, the main difference being that he used safranin dissolved in whiskey. We have not been able to repeat Thebesius' experiments because it is not possible at present to obtain his reagents in a pure state.

This finding points to the fact that there is a direct connection between the coronary arteries and the Thebesian veins. Histological sections have shown us, moreover, that this connection is not by way of the capillaries. It is important, therefore, to note that there is a "shunt system" between the arteries and the chambers of the heart.

We next cut out one of these small Thebesian vessels and by means of serial sections traced it from its opening in the chamber and found that large veins were emptying into it and that at times it terminated by a direct connection with the capillaries. This point also is very significant, as it shows that there is a direct connection between the chambers of the ventricles and the capillaries of the heart muscle. The clinical significance of this point you will see when I tell you of the following two cases. For these two cases I am deeply indebted to Dr. Timothy Leary. The first one was a negro woman who dropped dead. Such history as was obtainable pointed to the fact that she had earned her living almost up to the time of death as a seamstress. Necropsy revealed the fact that she had syphilitic aortitis and that both coronary artery openings were occluded by the syphilitic process. Another similar case was that of a sea-

man who gave a history of indigestion, but who also worked almost up to the time of his death. He also dropped dead, and the pathological findings in his heart were identical with those in the case I have just cited. Here, then, are two people able to work without coronary arteries. Where did the blood supply to their heart muscle come from? It has been shown that there is a direct connection between the Thebesian vessels and the capillaries of the heart muscle. It is almost certain that this is the origin of the blood supply in these two hearts.

Many of you have seen in the autopsy room very marked sclerosis of the coronary arteries, so marked, indeed, that the lumens were practically closed. Many of these people had had angina pectoris, and I should like to point out to you that this sclerotic process, as well as the syphilitic process, noted in the two cases above, was very gradual in its onset, so that the closure of the coronary arteries was very slow. In other words, if the closure of the coronary arteries is brought about very gradually, the Thebesian vessels can take up the function of these arteries and supply the heart muscle with blood. It is most likely that it is the sudden closure of the small terminal branch in coronary thrombosis that causes death, for we have found that if the patients survive the first immediate attack, they will recover, very frequently, if placed at absolute rest in bed. This long rest probably enables the heart to recover. A similar rest is often advantageous in the treatment of angina pectoris. It is my feeling that these long periods of rest enable the Thebesian vessels to take up more of the duties of the coronary arteries.

## CASE OF MALIGNANT DISEASE IN THE VULVA\*

BY NATHANIEL R. MASON, M.D., F.A.C.S.†

The patient C. R. was first seen March 17, 1927. She was 65 years of age and single. She gave a history of itching about the vulva for two years. The appearance of pain in this region caused her to seek relief. In January 1926 an operation was done on the external genitals and a warty growth was said to have been removed. A pathological report was not obtainable. Great relief of symptoms followed the operation. When first seen in March severe pain and itching had been present for several months and was much increased for several weeks. Bleeding had been present only since the day before. Local examination showed an edematous left labium minus in the upper part of which were two indurated lesions of the size of silver quarters, the upper one showing a crater in the interior. A bloody purulent discharge from the crater had a foul odor suggestive of malignancy. A vaginal examination was negative in no way suggesting a malignant involvement. The patient was sent here to the hospital at once.

Under treatment the lesions were cleaned up. The blood pressure dropped from 220 to 150. Dr. Malloy's report from a snipping was epidermoid carcinoma. On April 1 a partial vulvectomy was performed. Both the left labium majus and minus were

removed, excising a broad base about the lesions. The right labium minus was also excised as it was situated opposite the lesions on the left side. The wound was closed with interrupted silk worm gut, leaving a racket shaped scar. Convalescence was satisfactory with slight infection of the wound. Dr. O'Brien has given her 5 ten minute treatments with x-ray therapy on the 9th, 13th, 18th and 31st of August and on September 7th.

When last examined on November 30th there was no evidence of recurrence, either local or glandular. The tissues were soft, pliable and surprisingly free from scar tissue.

In connection with this case I want to report briefly the history of a patient previously shown by me here on May 6, 1924 when a Cancer Clinic was held.

This patient, E. C., is 59 years old. She was first seen July 20, 1922 with local symptoms about the external genitals of four to five months duration. A snipping from a suspicious growth at the posterior angle of the introitus September 18, 1922 showed epidermoid carcinoma when examined by Dr. Malloy. Five days later on September 23, 1922 a very extensive vulvectomy with dissection of glands in both groins was performed. Dr. Walker radiated the patient twice with 100 milligrammes of radium needles on October 27, 1922 and January 14, 1923.

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†For record and address of author see This Week's Issue page 720.

and localize bronchiectatic cavities and lung abscesses. A number of articles have been published in which great therapeutic value has been ascribed to it, especially in suppurative bronchiectasis, with or without bronchoscopic treatment (suction). Pritchard, of Battle Creek, treated 3 cases with repeated injections, varying from 6 to 16 in number, and stated his patients were much improved. Hedblom and others have employed it as a routine in diagnosis, but have not found it of any permanent benefit, as regards treatment. That has been our experience here at this hospital. The oil seems to diminish cough and expectoration for a few days following the injection, but no permanent benefit has resulted. There have been no bad effects from its use. The earlier attempts were with the bronchoscope, and, consequently, were attended with difficulty. More recently we have used the transglottic method, injecting the oil through a curved canula. This has worked very well and is much easier for the patient to undergo.

**Operative Methods.** In abscess, we have followed the ordinary methods of one or two stage operation, depending on the presence or absence of pleural adhesions walling off the general cavity. Local anaesthesia is used. Until recently I have always employed tube drainage. A fatal hemorrhage, however, in a recent case, occurring about two weeks after operation, where a particularly soft and pliable rubber tube had been used, makes me adopt an attitude of extreme caution. Hereafter, I shall use only gauze or rubber dam drains.

In bronchiectasis, which does not yield to medical measures, including rest in bed and posture drainage, surgery is certainly indicated. The only question lies in the choice of a method.

Simple tube drainage of the bronchiectatic

area, which implies drainage of some of the cavities in, or connecting with, the bronchioles and more or less aeration of them, is of distinct value in the certain cases. I have employed this in a few cases with some benefit in all. It is often only palliative, but in bilateral disease may be all that we can safely employ.

The more radical methods are lobectomy, which even in Lihenthal's hands has a mortality of 40 per cent. Graham's cautery lobectomy, in which he had a mortality of 8 per cent in 45 cases, and Whittemore's lobectomy by extra thoracic suture and subsequent sloughing of the lobe. The latter has performed this operation 6 times with one death.

I have used the last method in one case, probably an unfavorable one, as I found the adhesions too dense to deliver more than a third of the lower lobe. The patient went through the operation well, but succumbed the following day. An operation, which is far safer and, therefore, applicable in the majority of cases, is the graded extra-pleural thoracoplasty, as described by Hedblom. This is done in several stages and gives, usually, a great measure of relief through collapse of the diseased area and healing by cicatrization of a varying number of the cavities. It cannot be expected to accomplish a complete cure.

In one of my cases where the amount of expectoration was from 12 ounces to a pint in 24 hours, this operation, combined with phrenicotomy on the affected side, reduced the sputum to 4 ounces and permitted the patient to go back to work. In young and vigorous patients, no doubt, the more radical operations of Graham or Whittemore are justified. In the average case, however, I feel that extra pleural thoracoplasty is safer and promises a large measure of relief from symptoms.

## THE THEBESIAN VESSELS OF THE HEART AND THEIR RELATION TO ANGINA PECTORIS AND CORONARY THROMBOSIS\*

BY JOSEPH T. WEARN, M.D.†

I want to tell you very briefly of some experiments which have been carried on in the Thorndike Laboratory during the past two or three years. These experiments, we feel, throw some light upon various phases of the diseases of the coronary arteries. After several attempts, it was found that, if one obtains a human heart within four or five hours post mortem and perfuses the coronary arteries with oxygenated Locke-Rosenheim solution, it is possible to start the heart beating, provided rigor mortis has not set in. If, while the heart is beating, Berlin Blue is injected into the arteries, the dye fills the arteries and injects very completely the

entire capillary bed. Such an injection shows about one capillary for every heart muscle fiber. This is a very rich blood supply indeed. By this method we have also been able to confirm the findings of Spalteholz and numerous other workers, namely, that the coronary arteries are not end arteries. The larger arteries frequently anastomose. This is rather interesting, if one looks back into his clinical experience and recalls the fact that death may result frequently from a thrombosis of a smaller branch of an artery.

While conducting these experiments, we were quite surprised to note that a great deal of the dye and perfusate ran out, not through the veins of the heart, but directly into the chambers of the heart. Investigation of this point revealed the fact that this escape was through the Thebesian veins. We had to go as far back as 1706

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†For record and address of author see "This Week's Issue" page 775.

## NEW ENGLAND SURGICAL SOCIETY

## THE END RESULTS OF CHRONIC CHOLECYSTITIS\*

BY EDWARD L. YOUNG, JR., M.D., F.A.C.S.†

THE chance for cure in any chronic disease is always less than the possibility of cure in the same disease when it is acute, and the more indefinite the symptoms the less is the likelihood of a complete relief of these symptoms. In some diseases it is a serious question whether we have any right to use the term chronic because the chronic state is often not primary but secondary to some other factor, for instance, the diagnosis of chronic appendicitis as a primary condition has been largely eliminated. When it is a chronic appendix something else such as repeated acute attacks, cecal stasis, ptosis, or constipation is generally in the background. Whether or not the diagnosis of chronic cholecystitis should likewise be condemned was one of the reasons for beginning this study.

This paper is based on a study of all of the cases of biliary tract disease treated at the Massachusetts General Hospital for a period ending 1925 where the main classification in the hospital catalogue is chronic cholecystitis. No attempt has been made in the light of retrospective study or further knowledge of the cases to criticize this classification in any instance. The aim has been to see how these patients have fared and to see if it is possible to throw light on any of the factors leading up to success or failure of treatment. Moreover, in the light of recent studies in cholecystography as an aid to gall bladder diagnosis, it seemed worthwhile to have one more series of cases of this type where the diagnosis was based entirely on clinical evidence without the use of the dye. It is doubtful if any laboratory test can ever entirely supplant well established clinical evidence especially where as here, the positive diagnosis must often depend on a negative finding. It has already been claimed by one investigator, somewhat rashly it seems to me that a cure has been obtained in 100% of a series of cases where the Graham Test gave evidence of gall-bladder disease. If such were actually the case, there could be of course little use for such an analysis as this paper attempts as we would merely turn over a new leaf in our methods of diagnosis and in the light of this new knowledge become at once 100% accurate.

There were 300 cases in this series. Of these the end results were obtained in 115. 76 of these reported in person and were carefully questioned and examined either by myself or some other member of the gastro-intestinal clinic at the Massachusetts General Hospital. The remainder reported by letter.

There were 4 deaths in this number: a mortality rate of 13%. 2 died of peritonitis, 1 of hemorrhage, and 1 of pulmonary embolism. 7 others have died since of causes not connected with the operation and all of these were cured of the old symptoms.

Of these 115 cases 34 had stones present. This gives us at once a positive abnormal factor the removal of which should result in marked relief of symptoms. This is indeed the fact, all of them except 2 were cured. The 2 that continued to have symptoms had a sufficient reason for it, one because of the presence of duodenal ulcer, and the other because of reformation of stones in the ducts after the removal of the gall-bladder.

The results have been put in 3 groups: 1—cured, none of the old symptoms left; 2—relieved of the major part of the symptoms, but still with some factor left behind to bother them such as persistent slight indigestion or mild pain or distress at times. In this group also have been put 9 cases that had post-operative hernia and because of that have to wear support or have had to have further operations; and 3—cases that are the same or worse following operation. There are 70 in Group I, 25 in Group II, and 16 in Group III.

A more careful analysis of the 16 cases which interest us most reveal the following facts. At the time of operation the pathology noted was as follows: 2 showed the presence of stones; 1 with an accompanying duodenal ulcer; 1 other showed duodenal ulcer; 1 showed a duodenal diverticulum with an aberrant pancreas contained within it which was removed at operation; 1 showed a polyp of the duodenum; 6 showed slight adhesions between the gall-bladder and the duodenum or stomach; 2 were reported as merely slightly thickened and 2 as having no pathology. Since that time the following facts have been brought out: 2 more have been shown to have duodenal ulcer and because of the continuity of symptoms throughout, the suggestion is that the ulcer was present at the time of operation; 1 has been shown to form stones in the ducts. She has been operated on twice since and is at present suffering from symptoms which suggest reformation; 3 have been studied within the past year and no cause for the symptoms can be found; 1 of the 16 reported that she had exactly the same symptoms only more severe for 4 years after operation but that for the past year she had been free of trouble. She then produced a small calcium oxalate stone which she said she had passed one year ago from her urinary bladder and very innocently asked if I knew what it could be. As her whole attitude was that of thankfulness for

\*Read at the Annual Meeting at Manchester, N. H., October 19.

†For record and address of author see This Week's Issue page 5.

The patient was last seen on December 15, 1927, and was found to be in excellent general condition with no sign of local recurrence. She presents, apparently, a cure more than 5 years after radical operation.

Malignant disease of the external genitals is rather rare. Chronic irritation of the vulva, as pointed out by Taussig, particularly keratosis vulvae, seems to have a definite relation to the origin of cancer. Both carcinoma and sarcoma may develop in this region. The same distinguishing signs characterize the disease as elsewhere. Progressive induration, ulceration and involvement of lymph glands in the vicinity occur.

The commonest variety is epithelioma. It starts usually on the lower portion of the labium majus as a small hard nodule, which develops slowly and, at first, causes no symptoms. Occasionally troublesome itching is present from the start. After a varying period, the nodule breaks down, producing an ulcer surrounded by an indurated area. A watery discharge, at times mixed with blood, develops. Progress is rapid, after the malignant induration breaks down and ulceration occurs. Occasionally burning and superficial pain are present early, and, later, severe pain from the involvement of the deeper structures may develop.

Crossen points out that the inguinal glands become enlarged early at first simply from the lymphatic enlargement that always takes place when there is inflammation or persistent irritation of the genital region. As the process goes on, the glands become invaded with cancer cells and markedly enlarged.

The urinary meatus is an occasional site for cancer, and, whenever there is indurated tissue with bleeding in this locality, it must be considered. Carcinoma of the clitoris, likely to be melanotic, and cancer of the vulvo vaginal

gland, usually adenocarcinoma, also occur. The outlook is fatal, unless the condition is recognized and treated early. Two years is the usual course of the disease.

The treatment of cases of carcinoma of the vulva should always be wide surgical excision of the growth, excepting in cancer of the urethra and cancer of the clitoris close to the urethra. In both of these conditions radium treatment is best, because it usually does not destroy the function of the urethra. Surgical incision does destroy this function and this function cannot be replaced. Surgery may be preceded by radium application and followed by x-ray therapy. Cases of malignant disease of the vulva should be seen at least every three months or more often, if necessary.

*Preventive Inoculation Among Nurses at Boston City Hospital*—Discussed by Dr. George P. Sanborn

*Gangrene of Leg Associated With Heart Lesion, Chondrodystrophia Fetalis*—Cases discussed by Dr. Martin J. English

*Teratoma Cyst of Buttocks*—Case discussed by Drs. Martin J. English and Otto J. Hermann

*Chronic Laryngeal Stenosis*—Cases presented and discussed by Dr. Edwin H. Place

DR. E. P. JOSLIN.—Before the meeting is concluded I am sure I voice the opinion of all the doctors, who are here tonight, in expressing their appreciation of the City Hospital Staff in giving us this wonderful program. It has been quite an innovation for the Suffolk District Society, and it is an innovation we will want to repeat. The Committee and the City Hospital were unanimous in deciding to have this program. I am sure every one is glad to have come, and I want to congratulate the City Hospital on the demonstration they have given.

should be well established clinical and laboratory evidence that the gall-bladder is at fault, and that having made that diagnosis it should be removed in the absence of other demonstrable pathology regardless of whether or not it seems diseased to the examining hand

#### DISCUSSION

DR DAVID CHEEVER, Boston We all know what a tremendous piece of work it is to make such a careful analysis of such a large number of cases and we are very grateful to Dr Young for his important paper

It seems to me worth while to inquire first whether or not there is such a pathological or clinical entity as chronic cholecystitis, and second, if there is such an entity whether it can be relieved or cured by cholecystectomy. The termination "itis" as in the word "cholecystitis" signifies inflammation but chronic inflammation may be of several different types in different organs and under different conditions, for instance we have chronic cystitis of the urinary bladder characterized usually by the presence of pus but often with no fever—there chronic infection is the chief feature. Then we speak of chronic myocarditis which usually means a degeneration of the cells of the myocardium with a replacement of some of them by fibrous tissue—that is another form of chronic inflammation. Similarly, we speak of chronic nephritis which is usually a chronic fibrosis of the kidney.

So it seems evident that we ought to have a definition of what we mean by chronic cholecystitis. I don't attempt to offer such a definition but it is evident that the term covers a variety of lesions—cases where there is a chronic infection, cases where a former chronic infection has died out leaving the gall-bladder thickened and adherent and cases where the gall-bladder appears normal except for a little thickening but where it is affected in its concentrating power and its ability to empty itself. So there are many varieties and it is probable that operation will not relieve them all to an equal degree so evidently the influence of the exact type of pathological lesion is very great.

Now consider the question whether chronic cholecystitis causes symptoms which can be relieved by operation. Take Dr Young's figures—115 cases were considered of which 34 should be thrown out at once because gall stones were present also. We know that every case of gall stones is associated in some degree with cholecystitis and it is merely a matter of the method of record-keeping if such cases are catalogued also as chronic cholecystitis but in our present inquiry they should be thrown out, which leaves 81 cases of which 16 were not relieved by operation.

Now of the cases that were not relieved no less than 4 were found later to have duodenal

ulcer which it may be assumed, was the real cause of the trouble, 1 case proved to have a duodenal polyp, another a common duct stone and another a renal calculus all of which were overlooked. To these should be added 2 cases in which the gall-bladder showed no recognizable pathological lesion so that we have 9 cases of the 16 in which the failure to cure can scarcely be attributed to the removal of the chronically inflamed gall-bladder leaving 7 cases in which the failure must be accepted. This constitutes a percentage of failures of only 8.6%—a pretty small percentage of failures in an abdominal lesion. Perhaps this is no higher than an inevitable percentage of neurasthenics in whom we are bound to make mistakes in any field of surgery.

Now the sentinel gland was spoken of. It drains the gall-bladder chiefly and the under-surface of the liver but we know that the reversal of the lymph stream is a common thing when the vessels become blocked by carcinoma or other conditions so it is evident that this gland may be enlarged from infection from some other area than that usually tributary to the gland. For example in cases of ulcer of the duodenum the sentinel gland may be enlarged so we obviously cannot rely implicitly on the sentinel gland as indicating a lesion involving the gall-bladder or the liver.

Dr Young says that the gall-bladder should be removed if the clinical and laboratory evidence is against it even though at operation it shows no recognizable pathological condition. I do not subscribe to that. I think if you operate on the case and have a good chance to examine the gall-bladder if it is absolutely normal to inspection and palpation and if it can be emptied and you can, therefore, be reasonably sure that no calculus exists in the cystic duct or neck and if the common duct feels normal, I do not feel it is justifiable to remove the gall-bladder. True in such a case it will usually be a very easy thing to do and probably in such cases there will be nearly 100% of operative recoveries but if you do remove such a normal gall-bladder you are not likely to get a symptomatic cure and you will discredit surgery. I have done this more than once. I always feel cheap when I do it.

I think the mortality of 1.3% is an extremely good one and just what would be expected in any first-class hospital. I am surprised at the occurrence of 2 cases of fatal peritonitis, which is not usually much to be feared in chronic cholecystitis. I think that one death from hemorrhage is quite unusual unless it was due to hemophilia or the patient was jaundiced. There is only one source of blood supply to the gall-bladder—the cystic artery—which is a little vessel lying in a definite place except for certain common and simple anomalies, so one ought not often to get hemorrhage from the cystic artery.

what had been done for her, the incident left a somewhat uncomfortable feeling behind. Of these 16, 6 were reported to have a chronic appendix which in the report of the operator was said to be sufficiently diseased to have caused all the trouble. Another black mark against this diagnosis as the removal carried no added benefit. It is also interesting to note at this point that in this whole series there was only one case who considered herself about 50% cured after the cholecystectomy who was entirely cured following the later removal of an appendix. Of these 16 cases where the gall-bladder was examined pathologically, all but 2 were reported to show evidence of slight inflammatory damage. 2 were reported normal. If now we compare the macroscopic and microscopic pathology of the gall bladders in those cases which were completely cured, we find that 2 had neither macroscopic nor microscopic pathology and 9 had no gross pathology or at the most only trivial adhesions, or questionable thickening but microscopically the gall-bladder showed evidence of chronic inflammation. Of those relieved but not entirely cured, 1 showed no gross or microscopic pathology and 2 doubtful macroscopic and positive microscopic damage. Apparently the presence or absence of slight pathology at operation cannot be taken as a sure criterion of future relief.

The presence of an enlarged gland near the base of the cystic duct, the so-called "sentinel gland", has been used many times as evidence of pathology and a justification for cholecystectomy when nothing else is found and the gall-bladder feels normal. In this series the presence or absence of such an enlargement was mentioned 14 times. 13 times it was definitely enlarged and in these cases the end result fell into Group III in 8 instances. This is so large a percentage that it suggests a focus of trouble elsewhere than in the gall-bladder, the persistence of which may later keep up the symptoms. Once it was said to be absent and the patient has been entirely cured.

All of these cases with poor results had a cholecystectomy. Thus was the operation of choice in all but 7 of the cases. The 7 that had cholecystostomies were all cured without the need of any second operation.

The presence or absence of marked thickening of the pancreas was also looked for as having some possible relation to future trouble, but there was apparently no connection. One of the cases that was drained was treated in this way because of marked pancreatic thickening. That patient is cured. There were only 6 cases in all where the record noted the fact that there was thickening or nodularity of the pancreas. 2 of these have had some slight trouble since although they consider themselves cured by the operation. The other 4 have had no symptoms at all since being in the hospital.

35 out of this whole number have had some

restriction in their diet since operation. Most of them have to be careful in relation to fats and fried stuffs but in a few instances there seem to be special articles which make trouble such as ice cream, walnuts, tomatoes.

After finding out those cases relieved and those not relieved, I tried to correlate this with the evidence of disease as given in the histories and examinations in the records. In doing this I have recognized the fact that hospital histories are not always as complete as they might be and that even when complete, the impression one gets from a written story without the patient may be very different from that obtained from the patient himself and the examination. Nevertheless, I put the stories into two groups, those where the evidence seemed satisfactory in retrospect and those where it was not. Of the 16 failures 14 had unsatisfactory histories. Of the 25 patients with slight symptoms remaining 10 had unsatisfactory histories and of the 70 cures 10 had unsatisfactory histories. Of this series 16 patients had had previous operations for the same condition without relief, 8 the removal of the appendix, and 8 drainage of the gall-bladder. These 8 cholecystostomies without relief balance the 8 cases of the series which were drained with complete relief.

In seeing and talking with the patients themselves, there were two rather striking things, one, the large number that had gained a great deal of weight over and above what would be expected from the benefit to their digestion. Approximately 40% had gained markedly in weight, many of them reporting 40 to 60 pounds and one as high as 70 pounds. Only 2 were lighter than they were before operation. The other was the length of time after operation during which the patients continued to gain. Although many of them said they were well within a few weeks, 25% report that they continued to gain for at least a year and a few of them longer.

**Summary** The end results of 115 cases of chronic cholecystitis have been reviewed. 63% were cured, 15% were not cured, and 22% were relieved of their main symptoms.

The chief cause of failure was mistaken diagnosis, 25% of the cases having duodenal ulcer instead of cholecystitis. The more indefinite the symptoms and uncertain the diagnosis before operation, the greater the chance of failure.

There was no single bit of evidence which seemed definite enough as revealed at operation to tell whether or not the gall-bladder was the cause of trouble other than gross change in the gall-bladder itself. The removal of a slightly thickened, adherent gall-bladder did not cure in every case.

The presence of a "sentinel gland" did not necessarily point toward gall-bladder disease.

In conclusion it seems to me that the only justification for operation on the biliary tract

should be well established clinical and laboratory evidence that the gall-bladder is at fault, and that having made that diagnosis, it should be removed in the absence of other demonstrable pathology regardless of whether or not it seems diseased to the examining hand

### DISCUSSION

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So it seems evident that we ought to have a definition of what we mean by chronic cholecystitis I don't attempt to offer such a definition but it is evident that the term covers a variety of lesions—cases where there is a chronic infection, cases where a former chronic infection has died out leaving the gall-bladder thickened and adherent and cases where the gall-bladder appears normal except for a little thickening but where it is affected in its concentrating power and its ability to empty itself So there are many varieties and it is probable that operation will not relieve them all to an equal degree, so evidently the influence of the exact type of pathological lesion is very great

Now consider the question whether chronic cholecystitis causes symptoms which can be relieved by operation Take Dr Young's figures—115 cases were considered of which 34 should be thrown out at once because gall stones were present also We know that every case of gall stones is associated in some degree with cholecystitis and it is merely a matter of the method of record-keeping if such cases are catalogued also as chronic cholecystitis but in our present inquiry they should be thrown out, which leaves 81 cases of which 16 were not relieved by operation

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unless there is a hemorrhagic diathesis. On the other hand, it strikes me as unusual that there should have been no operative death from pneumonia. The 9 cases of post-operative hernia are regrettable—I may have a similar record but I feel that with careful measures of closure we ought not to have such a high percentage of post-operative hernias.

DR FRANK H. LAHEY, Boston. I do not feel that I can tell whether or not a gall-bladder is normal from its external appearance and at times even after palpation of its walls. This is particularly true of the cholesterol gall-bladder and it is certainly true that errors in cholesterol metabolism are at present the best explanation of the production of gall stones. We know that we have seen every stage in the production of the cholesterol stone from the lipid deposits in the polypoid projections of mucosa, on to the fine sand-like stones of cholesterol, which one could not feel, up to the large and numerous pale cholesterol stones which are readily palpable. We know that these cholesterol deposits are not associated with inflammatory reactions, and we know that when inflammatory reactions appear, cholesterol deposits are not found in the gall-bladder wall. We know that with jaundice we have a high cholesterol accumulation in the blood, and that this cholesterolemia is also found in pregnancy and diabetes, both conditions in which gall stones are not uncommon. All of these facts point with strong suspicion, as I have already stated, to the fact that the cholesterol gall-bladder is the early gall stone gall-bladder.

Now the typical cholesterol gall-bladder, even with well-developed small, non-palpable cholesterol stones, has a smooth, normal appearing external surface. This is the point which I wish to make from our experience, if you have operated upon a patient after adequate examinations and with symptoms suggesting a gall-bladder and of sufficient degree to lead you to operate, and then because the external appearance of the gall-bladder is normal or its palpation does not show stones, you do not remove the gall-bladder and do not find an explanation for the symptoms, and following operation the symptoms persist,—how can you say that they are not due to the gall-bladder which you did not remove? It must be admitted, also, that one sees a gall-bladder of this type containing cholesterol stones that empties and fills normally with the Graham test. We know from personal experiences with this test that it is fine when it correlates with the history, but we must not let the fact that the gall-bladder is of normal contour and empties and fills deter us from operation, when in spite of this there are persistent symptoms of gall-bladder disease or obstruction.

I must say I cannot differentiate some pathological gall-bladders from their external ap-

pearance, so our position should be this—that the symptoms of cholecystitis and the cholesterol gall-bladder are vague, they are not typical, there is no entity of symptoms that you can place your fingers on, as you so frequently can in gall stones, so errors in diagnosis must be great, and we must be extremely cautious and critical in the diagnosis.

We must not operate on these cases without eliminating other things, and not without persistent and justifiable symptoms, but when we do, and when we have critically studied them, then, when they are operated I think it would be a mistake to leave these gall-bladders behind, and I think that the penalty of taking them out will be less than the penalty of leaving them in.

By the early removal of diseased gall-bladders, one eliminates the train of symptoms which follows late removal of gall-bladders when there co-exists cholecystitis and pyloric adhesions, pancreatitis and duct infections.

DR ERNEST L. HUNT, Worcester. A word about the post-operative hernias—I am more impressed by Dr. Young's figures than by Dr. Cheever's estimate. In my own follow-up I have been surprised by the number of post-operative hernias and I would say that Dr. Young's figures are not an exaggeration of the figures in general. I think that in the presence of real gall-bladder pathology when we get rid of the gall-bladder we may generally be satisfied not to remove the appendix especially if it is normal to palpation.

I have used the short, Ravdin, incision with considerable satisfaction believing that the danger from leaving in the normal appendix is less than that from the increased liability to post-operative hernia incident to the long incision and its interference with the innervation of the upper segment of the rectus.

DR. D. F. JONES, Boston. I am sorry but I must disagree with Dr. Lahey's point of view in regard to chronic cholecystitis. We surgeons have been discussing the disease for some years but I doubt if anybody in this assembly can give a satisfactory description of the disease. It is my opinion that a gall-bladder which has a few round cells in the wall does not necessarily cause the indefinite group of symptoms which we say are due to chronic cholecystitis. I have been unable to find a condition at operation which seems to definitely indicate a chronic cholecystitis.

Dr. Lahey has suggested many serious conditions such as pancreatitis which this disease may cause, but is it not more likely that a large organ like the liver which is receiving bacteria all the time is much more likely to cause these diseases? Have we not got the cart before the horse when we take the gall-bladder alone into consideration?

If we admit that there is such a condition as

chronic cholecystitis, is it a serious disease? I believe it is a disease which rarely demands an operation. If patients with chronic cholecystitis, except the severe cases which are very easily diagnosed, were asked if they were uncomfortable enough to demand an operation, few would ever be operated upon.

Dr. Lahey has pointed out that many diseases may be caused by chronic cholecystitis, yet I believe that few surgeons would be operated upon for chronic cholecystitis unless they were sufficiently uncomfortable to demand an operation.

The cholesterol or strawberry gall-bladder is said to be a serious condition, for it causes many symptoms and may be the cause of gall stones at some future time but should we operate for fear that gall stones may be formed. The strawberry gall-bladder is not such a serious condition probably as it was considered at one time, at least some members of the Mayo Clinic do not take it so seriously as formerly.

It is probable that chronic cholecystitis that is the type which it is difficult or impossible to distinguish at operation is not a serious disease. We can therefore take sufficient time to determine as to whether operation is absolutely necessary or not, and should we not do this when Judd of the Mayo Clinic and many others admit that the results of operation are very disappointing except in those cases in which there are definite attacks of pain.

If we consider Dr. Young's statistics we find that but 50% of the chronic cholecystitis cases were cured and these include all varieties of chronic cholecystitis.

Perhaps an important point to consider is that we shall not have any incentive to look for the real cause of symptoms if we believe that a perfectly normal appearing gall-bladder can cause serious symptoms. There are many conditions to be looked for when the chief symptom is epigastric pain, such as a duodenal or gastric ulcer which has not been shown by the X-Ray, pancreatitis, small intestine obstruction, diaphragmatic hernia, arthritis, neuritis caused by the pinching of the intercostal nerve between the lower ribs, and bad posture.

The milder cases of chronic cholecystitis or supposed chronic cholecystitis should not be taken too seriously. Let us first determine what pathological condition of the gall-bladder deserves the name of chronic cholecystitis.

DR. P. E. TRUESDALE, Fall River. All the evidence thus far indicates that the method of dealing with border-line cases of cholecystitis is still a mooted question.

At the operating table the surgeon is often influenced in his attitude toward the doubtful gall-bladder by what other lesions he finds or fails to find. If a carefully taken history and a conscientious study of the case has focussed attention on the gall-bladder, the appearance of the gall-bladder need not be very bad to war-

rant its removal, especially if exploration of the abdomen fails to reveal another lesion to account for the patient's symptoms. After long periods of invalidism patients themselves or members of their families implore the surgeon to be radical in undertaking measures to bring about cure, however, he cannot take seriously the gesture of a discouraged patient or relative.

After this splendid symposium we are still at sea on the perplexing problem of treating the chronic gall-bladder. In all these cases we will do well to give the patient as much consideration as the gall-bladder.

DR. EDMUND H. STEVENS, Cambridge. There are many operations done by surgeons today that were not done twenty years ago. They sometimes take out tonsils and ream out the nose when I believe, there is no need of it and the patient is not improved by such an operation.

Now this matter of gall-bladder disease—there are many cases that come on with an attack of fever and a palpable gall-bladder. The patient usually gets over such an attack but is likely to have a recurrence of the trouble and unless relieved by a surgeon there is danger of the attack proving fatal. Such a condition may be associated with gall stones or simply an inflamed gall-bladder. At the present day these cases usually fall into the hands of a surgeon and the patient recovers.

The matter of taking out gall-bladders—at first we drained the majority of gall-bladders, some cases diagnosed as gall stones proved to be pancreatitis. It has seemed to me that often the draining of the gall-bladder would ward off an attack of pancreatitis, of course in a case of contracted gall-bladder containing stones where the gall-bladder does not function it is better to have it removed. When a woman comes to you and says she has tenderness in one spot and has had this for a long time her color is sallow, she is thin, and has chronic indigestion, you determine that this is a case for a surgeon. Such cases usually get well when the gall-bladder is removed. These are cases of chronic cholecystitis. I have examined many women who have come to me for an opinion and found the symptoms just spoken of. These cases generally recover if they fall into the hands of a good surgeon.

DR. LYMAN ALLEN, Burlington, Vt. In Dr. Young's paper he says that the patients whose gall-bladders he drained all recovered. I think that in a good many cases drainage of the gall-bladder is the better operation. (We do not remove the urinary bladder.) Cholecystostomy is certainly a simpler operation than cholecystectomy, and the mortality is lower. That does not mean that I would drain a gall-bladder that ought to come out. The disease is usually not primary in the gall-bladder. Why take out the thing that is not the cause? Draining as well as cholecystectomy relieves the probability of pancreatitis. If you take the gall-bladder out,

the ducts are going to dilate and do the work of the gall-bladder. One case was reported by Dr Young in which gall stones were formed after cholecystectomy. So you do not stop the formation of gall stones by removing the gall-bladder. Instead of the decision that *every* gall-bladder ought to be taken out or left alone, I feel strongly that there are many cases in which cholecystostomy is the better operation, partly because in certain cases it is the safer operation.

DR GEORGE C WILKINS, Manchester, N H. Most of the discussion so far has been carried on by men who are associated with large clinics. These men don't have to live with the patient. We do. And it seems to me the decision whether a questionable gall-bladder should be removed depends on something else, and that is the welfare of the patient, not whether we are curing the pathological condition, but whether we are making the patient better symptomatically and functionally. That is the thing we have to live with when we see these patients afterward.

I think that too many times the pathology is removed without reference to the patient and to the patient's welfare afterwards. When a patient is coming around to see us as we see them here, for a number of years afterwards, we like to have that patient well, and to come back to us and tell us that our treatment by operation or lack of operation has helped them. I think the advisability of operation should be judged with these points in mind in the presence of mild pathology.

DR DAVID CHEEVER, Boston. When Dr Allen said "we don't remove the urinary bladder," my neighbor said "we would if we could, very often!" I do not want my attitude to be misunderstood. Dr Lahey said "if the gall-bladder looked normal and if it had no adhesions and if it emptied well." He didn't mention "feeling," but he would be the first to palpate the gall-bladder.

Now he described the cholesterol gall-bladder as having an extensive deposit of cholesterol in the mucosa and a polypoid condition, and I maintain that that could not exist without thickened gall-bladder walls. Now I classify a thickened gall-bladder as a pathological gall-bladder, but I do not believe that the absolutely normal appearing gall-bladder without adhesions, slate colored, with no thickening of the wall on palpation, is a cholesterol gall-bladder.

DR FRANK H LAHEY, Boston. I am glad to have Dr Jones disagree with me. It is a very healthy thing for me and for you, also, to listen to these disagreements.

I would not have you think that I would advocate operating upon everyone who has pain or discomfort of any degree in their right upper quadrant. The point I have tried to make is that the diagnosis of chronic cholecystitis is difficult and uncertain, which makes it all the more necessary that we should be extremely

painstaking and critical in making it, but that when we make it and operate, provided no explanation for the symptoms can be found, the fact that the gall-bladder appears normal on the outside should not prevent us from taking it out.

This situation is in some ways like that of chronic appendicitis, or perhaps non-acute appendicitis. We all know how abused this diagnosis is, and that a great many appendices are taken out unnecessarily under this diagnosis. Nevertheless, this should not lead us to the position that there is no such condition, because that is not the fact.

I recall once having a most heated private argument with Dr Jones about the wisdom of the employment of a plaster spica in a hypothetical case of fractured femur, I advocating and he opposing. After a lengthy disagreement, either he asked me or I asked him what type of fracture we were discussing. Upon our ascertaining that I was discussing a transverse fracture and he an oblique one, dissension was eliminated and our agreement complete. Such are often the foundations of disagreement. The fundamental features, it appears to me, are—what are the criteria of pain and distress? I have already stated the basic principle of my contention that the vagueness of the symptoms of gall-bladder disease without demonstrable stones necessitates the most painstaking elimination of other sources for the symptoms, and the most critical study before operation is undertaken. When this is done and no other explanatory pathology is found, no matter how normal the outside of the gall-bladder looks, it should be removed once operation is undertaken and no other pathology found.

DR E L YOUNG, JR, Boston (closing). I don't know as I have very much to add. I am grateful to the men who spoke as it helped to clarify my own somewhat chaotic ideas.

After Dr Cheever's revision of my figures one way and Dr Jones' revision the other way I am convinced that you can make statistics come out any way you want to.

I remember in my course at college I was taught, "get your premises first" and I think the premise in this discussion ought to be this, as Dr Stevens and Dr Wilkins brought out—that the patient in the chronic condition is the one who is going to say in the end whether the thing was a cholecystitis or not. They do not care whether the pathologist found anything under the microscope or not, they want to be cured. You may have to use months of clinical observation. Often when patients come to us for chronic cholecystitis they know that there is an X-ray and a Graham test, and if you don't tell them within a short time what they have got, they will go somewhere else. You can't tell a patient that you don't know what is the matter and that you are entitled to remain ignorant until a long period of clinical study shall tell the story.

## TOXEMIA IN PREGNANCY

BY REGINALD D. MARGESON, M.D., F.A.C.S.\*

**T**HE fifty-six cases of toxemia subsequently described in this article have been taken from private practice and represent patients that came to the author for delivery or were seen by him in consultation. While not a large series, it will perhaps supplement the groups studied by Kellogg and others interested in the subject.

Many of these patients received good prenatal care. One had no prenatal care, a few were neglected, and three refused advised treatment. Had proper prenatal care been given to this latter group, or had the patients accepted the treatment advised, the outcome, both to mothers and foetus might have been much different.

In a number of cases there was a family history of toxemia, most often of the patient's mother. The data, however, are not complete enough to form any conclusion.

Fibroids were noted in five cases, or in 9% of the series. There were twins in three cases, or in 5% of the series. Over 70% were primiparae, and more than 50% were between the ages of twenty-five and thirty-five years.

The cases have been tabulated below by number, pregnancies accompanied by a toxemia in the wider spaces in the chart, pregnancies without toxemic symptoms in the narrower spaces. From left to right will be found Case Number, Date of Delivery, Patient's Age, Para, Highest Recorded Systolic Blood Pressure, Amount of Albumin in Urine, Severity of Toxemic Symptoms, Convulsions, Recurrent Toxemia, Mode of Delivery, Foetal Mortality, Maternal Mortality, Premature Separation of Normally Implanted Placenta, Type of Toxemia, and Type of Prenatal Care. (See Table.)

Some of the above cases warrant a more detailed description, which follows.

**CASE 1** Neosalvarsan had been given before marriage for a positive Wassermann. Wassermann was negative at the time of marriage and when pregnant. Two years after the delivery the blood pressure was 110 and the urine negative. The fibroid was then removed and an uneventful convalescence followed.

**CASE 3** In the seventh month of her third pregnancy patient under my care was taken with severe

abdominal pain and slight bleeding. At 2:00 A.M. on January 17, 1922, a local physician made a vaginal examination, gave her a quarter grain of morphia, and told the family that there was no need of calling me until later. I saw the patient at 8:00 A.M. There was little doubt as to a diagnosis of separated placenta. She was immediately taken to a hospital, where a No. 4 Voorhees Bag was inserted and expelled two hours later. There was an easy delivery by version of a seven months dead baby, the placenta being entirely separated. Following delivery the patient was in excellent condition. Later she developed streptococcus puerperal septicemia and died on the twelfth day. At the time there were two cases of streptococcus puerperal infection in this hospital, both of which died. There was a history that the patient's mother had convulsions when the patient was born.

**CASE 6** I was called to see this case at home twelve hours before delivery. Patient was in active labor and not having convulsions. The baby was alive, the cervix dilated three fingers. The family were ignorant people and refused to allow delivery or any procedure that would hasten it. In ten hours the patient was having convulsions and two hours later was delivered of a still born baby.

**CASE 8** This patient was a typical chronic nephritic. Her third pregnancy was terminated by bag and high forceps on January 19, 1922, and was an eight pound girl apparently normal. Within twelve hours, however, it was noticed that the child was suffering from a flaccid paralysis of both legs and of the muscles below the waist. X-ray was negative. It would seem that there must have been some congenital defect in the cord. The child is still living; the paralysis has persisted.

**CASE 20** A chronic nephritic with a superimposed severe acute toxemia in her second pregnancy. Vaginal caesarean was performed and a living four and a half pound baby delivered. Seven weeks after birth, unfortunately, the baby had a bronchopneumonia and died.

**CASE 26** This patient was a very obese woman and during the second month of her second pregnancy developed a rapid pulse (110 to 130) and a metabolism of plus 45. Therapeutic abortion was advised and refused. September 27, 1926, she suddenly became very sick, with a temperature of 104 and pulse of 160. A manual dilatation with extraction of a dead five months foetus was easily done. On the twelfth day against advice she left the hospital. A few days later a large breast abscess was drained. She died on October 14, 1926, of what seemed to be a general pyogenic infection with a questionable liver abscess.

**CASE 27** The urine of this patient, a primipara, had not been examined for six weeks. She was in a poorly equipped hospital, was having convulsions and was not in labor. The cervix was rigid, the abdomen very large. Twins were not diagnosed. An abdominal caesarean was performed. One twin lived three months, the other is still living. The mother died in eighteen hours. Proper prenatal care in

the ducts are going to dilate and do the work of the gall-bladder. One case was reported by Dr. Young in which gall stones were formed after cholecystectomy. So you do not stop the formation of gall stones by removing the gall-bladder. Instead of the decision that every gall-bladder ought to be taken out or left alone, I feel strongly that there are many cases in which cholecystostomy is the better operation, partly because in certain cases it is the safer operation.

DR. GEORGE C. WILKINS, Manchester, N. H. Most of the discussion so far has been carried on by men who are associated with large clinics. These men don't have to live with the patient. We do. And it seems to me the decision whether a questionable gall-bladder should be removed depends on something else, and that is the welfare of the patient, not whether we are curing the pathological condition, but whether we are making the patient better symptomatically and functionally. That is the thing we have to live with when we see these patients afterward.

I think that too many times the pathology is removed without reference to the patient and to the patient's welfare afterwards. When a patient is coming around to see us as we see them here, for a number of years afterwards, we like to have that patient well, and to come back to us and tell us that our treatment by operation or lack of operation has helped them. I think the advisability of operation should be judged with these points in mind in the presence of mild pathology.

DR. DAVID CHEEVER, Boston. When Dr. Allen said "we don't remove the urinary bladder," my neighbor said "we would if we could, very often!" I do not want my attitude to be misunderstood. Dr. Lahey said "if the gall-bladder looked normal and if it had no adhesions and if it emptied well." He didn't mention "feeling," but he would be the first to palpate the gall-bladder.

Now he described the cholesterol gall-bladder as having an extensive deposit of cholesterol in the mucosa and a polypoid condition, and I maintain that that could not exist without thickened gall-bladder walls. Now I classify a thickened gall-bladder as a pathological gall-bladder, but I do not believe that the absolutely normal appearing gall-bladder without adhesions, slate colored, with no thickening of the wall on palpation, is a cholesterol gall-bladder.

DR. FRANK H. LAHEY, Boston. I am glad to have Dr. Jones disagree with me. It is a very healthy thing for me and for you, also, to listen to these disagreements.

I would not have you think that I would advocate operating upon everyone who has pain or discomfort of any degree in their right upper quadrant. The point I have tried to make is that the diagnosis of chronic cholecystitis is difficult and uncertain, which makes it all the more necessary that we should be extremely

painstaking and critical in making it, but that when we make it and operate, provided no explanation for the symptoms can be found, the fact that the gall-bladder appears normal on the outside should not prevent us from taking it out.

This situation is in some ways like that of chronic appendicitis, or perhaps non-acute appendicitis. We all know how abused this diagnosis is, and that a great many appendices are taken out unnecessarily under this diagnosis. Nevertheless, this should not lead us to the position that there is no such condition, because that is not the fact.

I recall once having a most heated private argument with Dr. Jones about the wisdom of the employment of a plaster spica in a hypothetical case of fractured femur, I advocating and he opposing. After a lengthy disagreement, either he asked me or I asked him what type of fracture we were discussing. Upon our ascertaining that I was discussing a transverse fracture and he an oblique one, dissension was eliminated and our agreement complete. Such are often the foundations of disagreement. The fundamental features, it appears to me, are—what are the criteria of pain and distress? I have already stated the basic principle of my contention that the vagueness of the symptoms of gall-bladder disease without demonstrable stones necessitates the most painstaking elimination of other sources for the symptoms, and the most critical study before operation is undertaken. When this is done and no other explanatory pathology is found, no matter how normal the outside of the gall-bladder looks, it should be removed once operation is undertaken and no other pathology found.

DR. E. L. YOUNG, JR., Boston (closing). I don't know as I have very much to add. I am grateful to the men who spoke as it helped to clarify my own somewhat chaotic ideas.

After Dr. Cheever's revision of my figures one way and Dr. Jones' revision the other way I am convinced that you can make statistics come out any way you want to.

I remember in my course at college I was taught, "get your premises first" and I think the premise in this discussion ought to be this, as Dr. Stevens and Dr. Wilkins brought out—that the patient in the chronic condition is the one who is going to say in the end whether the thing was a cholecystitis or not. They do not care whether the pathologist found anything under the microscope or not, they want to be cured. You may have to use months of clinical observation. Often when patients come to us for chronic cholecystitis they know that there is an X-ray and a Graham test, and if you don't tell them within a short time what they have got, they will go somewhere else. You can't tell a patient that you don't know what is the matter and that you are entitled to remain ignorant until a long period of clinical study shall tell the story.

METHOD OF DELIVERY IN SEVENTY SIX PREGNANCIES ACCOMPANIED BY TOXEMIA AND SEVENTY NINE RESULTS

Abdominal Caesarean	9	<ul style="list-style-type: none"> <li>8 alive and well</li> <li>1 still born</li> <li>1 twin died at three months</li> </ul>
Vaginal Caesarean	3	<ul style="list-style-type: none"> <li>1 at six and a half months died</li> <li>1 at seven months died in six weeks of pneumonia</li> <li>1 at four and a half months macerated</li> </ul>
Manual Extraction	8	<ul style="list-style-type: none"> <li>4 still born at term (1 set twins—</li> <li>2 five months foetus hydrocephalics)</li> <li>2 four and a half months foetus</li> </ul>
Forceps	25	<ul style="list-style-type: none"> <li>18 <ul style="list-style-type: none"> <li>17 alive and well</li> <li>1 with paralyzed legs</li> </ul> </li> <li>7 <ul style="list-style-type: none"> <li>1 died in ten days of septicemia</li> <li>1 died in three days of foetal toxemia</li> <li>2 died in three days of cerebral hemorrhage</li> <li>1 macerated at term</li> <li>2 eight months foetus died</li> </ul> </li> </ul>
Normal Deliveries	23	<ul style="list-style-type: none"> <li>12 <ul style="list-style-type: none"> <li>11 alive and well</li> <li>1 hydrocephalic</li> </ul> </li> <li>11 <ul style="list-style-type: none"> <li>1 still born at term</li> <li>1 at eight months</li> <li>1 at seven months</li> <li>1 at nine months</li> <li>1 died at three months after birth</li> <li>6 four and a half to six and a half months foetus</li> </ul> </li> </ul>
Version	8	<ul style="list-style-type: none"> <li>2 alive and well</li> <li>6 <ul style="list-style-type: none"> <li>1 at seven months still born</li> <li>1 at seven months died</li> <li>Twins at six months died</li> <li>1 at term died in three days</li> <li>1 at term died in four days</li> </ul> </li> </ul>
Bag Used	9	<ul style="list-style-type: none"> <li>3 forceps <ul style="list-style-type: none"> <li>2 alive and well</li> <li>1 with paralyzed legs</li> </ul> </li> <li>2 normal deliveries <ul style="list-style-type: none"> <li>five months foetus</li> <li>six and a half months foetus</li> </ul> </li> <li>4 version <ul style="list-style-type: none"> <li>1 alive and well</li> <li>Twins at six months</li> <li>1 at seven months died</li> </ul> </li> <li>1 vaginal caesarean at four and a half months</li> </ul>
Therapeutic Abortion	2	<ul style="list-style-type: none"> <li>1 at three months</li> <li>1 at two months</li> </ul>

unfortunate enough to suffer from a premature separation of the normally implanted placenta

MATERNAL MORTALITY

Case Number	Cause of Death	Time	Type of Prenatal Care
3	Separated placenta Puerperal septiemia	12 days	Good
26	Pyogenic septiemia Chronic nephritis	17 days	Refused treatment
27	Eclampsia caesarean section Acute toxemia	18 hours	Poor
36	Shock ? ruptured uterus Chronic nephritis	2 hours	Refused treatment
40	Uraemia Chronic nephritis	12 days coma	Fair

Three of the maternal deaths were chronic nephritis. Repeated pregnancies in chronic nephritis are sure to increase the maternal mortality.

The author finds, in analyzing four hundred consecutive cases that came to him for delivery (this does not include cases seen in consultation or cases sent because of toxic symptoms), that twenty-two, or 5½%, developed toxemia. Tabulating these cases, which have been marked in Roman numerals in the above series we have

Total number of cases	400
Developed Toxemia	22 (5½%)
Acute Toxemia	17 (4¼%)
Chronic Nephritic Toxemia	5 (1¼%)
Recurrent Toxemia, Non nephritic	2 (12%)
Recurrent Toxemia, Nephritic	5 (100%)
77% of the toxemics	
23% of the toxemics	
32% of recurrence	

similar cases would often prevent serious complications and would lower maternal mortality

**CASE 34** A case of low reserve kidney or hydro nephrosis. At first examination, when two months pregnant, there was a slight trace of albumin present. This persisted during pregnancy and is present in the same amount now. The blood pressure was always low, 100 to 110 systolic. Marked progressive swelling of the legs during pregnancy was her only symptom. The baby is living and well.

**CASE 36** This case was three weeks over due and refused to go to a hospital until she went into labor. I was called after an unsuccessful attempt at delivery had been made under ether. I was forced to do an embryotomy on a very large dead baby. The mother died of shock and probably a ruptured uterus. Education, and insistence upon toxicemic cases going to a hospital might prevent such disasters.

**CASE 40** This case died of uraemia twelve days postpartum. She was a chronic nephritic; the baby still born at term.

**CASE 43** This was a mild toxicemic case with stones in both kidneys. She was sent to me with the diagnosis of intestinal obstruction, and because of severe intestinal symptoms labor was induced. Intestinal obstruction was not the correct diagnosis but because of severe abdominal distention, pain, and developing toxemia, it was necessary to deliver at seven months. The baby died in three days.

**CASE 44** Patient's first delivery was a classical abdominal caesarean section performed because of a contracted pelvis rather than the toxemia, after an eight hour test labor. Afebrile convalescence followed and she left the hospital in two weeks. The second pregnancy resulted in a subserous rupture of the original caesarean scar, directly over the center of the placenta. The baby was alive. There had been so much bleeding into the broad ligaments and Space of Retzius that it was deemed advisable to remove the uterus. An uneventful convalescence ensued, and both mother and baby left the hospital in sixteen days.

**CASE 49** This was a very interesting nephritic who had been under the care of an expert medical man since the birth of her second baby. She went through the third pregnancy without operative intervention without developing severe toxicemic symptoms (one of the few chronic nephritics in which the kidney condition was not aggravated) and was delivered at term of a healthy normal baby.

**CASE 50** A case that apparently developed a serious chronic nephritis after the birth of her first child. She had the very best medical care but two years previously was not expected to live. With the second pregnancy the foetus died at four and a half months and was expelled normally. Patient is living with very little increase in nephritic symptoms.

**CASE 56** This was one of those cases with a steadily rising blood pressure from 120 systolic at five months to 160 at time of delivery. There was no albumin in the urine. There were mild toxicemic symptoms. This case would probably fall into the group of low reserve kidney. The baby is living and well.

#### CONVULSIONS

Convulsions took place in nine cases, eight primiparae, and one multipara, with one death, a primipara. That good prenatal care had been given to the majority of these cases seems to be the only reason for the low mortality. The tox-

emic symptoms of the patient that died were unrecognized until a few hours before convulsions. A study of these cases indicates that the toxemics who have frequent examinations and who develop convulsions suddenly because of an acute fulminating condition, have a much better chance of surviving, if properly treated, than those who have not had this care and who have gradually developed a severe toxemia. These latter cases have become so thoroughly toxic they do not respond to treatment, hence there is a resulting high mortality.

#### CLASSIFICATION OF TOXEMIAS

Tabulating the toxemias, we have

Acute Toxemia	44 cases ( 79%)	} 28% of re- cur- rence
Chronic Nephritic Toxemia	12 cases ( 21%)	
Recurrent Toxemia, Non nephritic	5 cases ( 11%)	
Recurrent Toxemia, Nephritic	11 cases (100%)	
Acute Toxemia, babies living	26 cases ( 55%)	
Recurrent Toxemia babies living	5 cases (100%)	
Death of foetus	21 cases ( 45%)	
Chronic Nephritics, babies living	22 cases ( 38%)	
Death of foetus	36 cases ( 62%)	
(This includes all recorded deliveries)		

By appropriate treatment, the symptoms in the mild toxicemic cases may usually be arrested and lessened, and thus some cases may be held in check that otherwise would surely become seriously toxicemic. By appropriate treatment is meant a minimum of salt, low protein diet, catharsis, rest, frequent urine examinations (qualitative and quantitative), frequent blood pressure readings, and prompt delivery if symptoms increase.

#### FOETAL MORTALITY

In the above fifty-six cases there were recorded one hundred fifty six pregnancies. Including the three sets of twins there were one hundred and fifty-nine babies. Of this number ninety-eight babies lived. Sixty-one pregnancies terminated in death to the foetus. The series included the following foetal deformities:

Foetal Deformities Six cases—eight babies 10%	1 With paralyzed legs (Case No 8)
	1 Anencephalic (Case No 8)
	3 Hydrocephalics (1 set twins) (Cases 21 and 28)
	1 Monstrosity (Case No 42)
	1 Idiocy (Died at six years of age) (Case No 47)
	1 Spina Bifida (Died in three weeks) (Case No 54)

Regardless of the prenatal care, foetal mortality is high in toxemia. In the chronic nephritics it steadily increases in repeated pregnancies. In the acute nephritics the prognosis in future pregnancies is good unless the mother is

ROADS

TOTAL	156	44	12	16	9	98	61	5	26	21	22	36	40	16	8	5
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TERMS USED IN TABULATION

A.C.S.	Abdominal Caesarean Section	V	Version, Internal Podalic
B	Boorhees Bag Inserted	V.C.S.	Vaginal Caesarean Section
M.E.	Manual Extraction	L.K.R.	Low Reserve Kidney
H.F.	High Forceps Delivery	A.T.	Acute Toxemia
L.F.	Low Forceps Delivery	C.N.	Chronic Nephritis
M.F.	Mid Forceps Delivery	T	Twins
M.D.	Manual Dilatation	P	Para
N	Normal Delivery	M.	Maternal Deaths
P.C.S.	Porro Caesarean Section	D	Dead
R.T.	Pectal Tube		
T.A.	Therapeutic Abortion		



77% acute toxemias is undoubtedly a little too high, as some of these cases in time would become chronic nephritics.

The 12% recurrent toxemic group is too low, as some of the cases have not had pregnancies following the toxemia. This percentage would probably be nearer 15% or 20%.

One woman in eighteen given prenatal care developed toxemia. Eliminating the chronic nephritics, there would be one in twenty-three.

Prenatal care is imperative. If given, it will reduce eclampsia and maternal mortality to a minimum. When toxic symptoms appear, the patient should be treated in a hospital. If the toxemia is mild and occurs late in pregnancy, the prognosis is excellent for both mother and child. Operative intervention is not required unless symptoms increase in severity. If they do increase in severity, the patient should be delivered, in most instances by induction of labor and the vaginal route.

In a toxemia developing early, prior to six and a half months, the prognosis for the baby is extremely poor. Seldom is it wise to allow the pregnancy to continue with the hope that by tiding the mother over to eight months or longer you may have a larger baby and one that will survive. The risk to the mother is too great. Most of them, in spite of the best treatment, show increasingly severe symptoms. There is danger of eclampsia. Certainly the toxemia does not lengthen the patient's life, it probably shortens it. And, in the end, when everything possible has been done, the babies, being thoroughly toxic, seldom live. Many die within a few days, or a few weeks at the most.

All of these cases can be delivered by vagina. Cases developing severe toxemic symptoms suddenly, regardless of the duration of the pregnancy, should be delivered as soon as possible, and, when chronic nephritics or multiparae, by vagina.

A primipara, in labor with a dilatable cervix, or with a dead baby, or if it seems from the symptoms and examination that such a patient will not have convulsions for eighteen or twenty-four hours, may be delivered from below. If the patient is at or near term and having convulsions, or on the verge of having convulsions, with the baby alive, an abdominal caesarean section is justifiable. I am referring, of course, to primiparae that have had good prenatal care, as in Case No 12 in the above series. Two days earlier her blood pressure was normal, the urine negative, and toxic symptoms absent, yet she had convulsions before they were able to get her to the hospital. She was not in labor, the cervix was rigid, the baby alive. At term there was an acute fulminating toxemia. I did an abdominal

caesarean section. Both mother and baby are living. There have been no pregnancies since.

Neglected primiparae having convulsions, who in many instances have been developing a progressive toxemia for a considerable period of time, are very poor risks. It is a question whether they should be delivered from above or below, the mortality is very high regardless of how they are delivered. As far as the baby is concerned, its chances are better by caesarean section. Case No 27 will illustrate this type. With adequate prenatal care, the number of such cases will be greatly reduced. Unless the symptoms are mild and easily controlled, the patient should be put into a hospital and delivered as soon as possible.

There are a few cases in which there is a slight trace of albumin during the entire pregnancy, rarely are there any casts, the blood pressure remains low, there are very mild toxemic symptoms. There are also a few cases showing a steady rise in blood pressure, with no albumin, and with only mild toxemic symptoms. In the former the term hydronephrosis is commonly used, and such cases are illustrated by Case No 34, the latter by Case No 56. They are probably cases of low reserve kidney. Both types require careful watching, but seldom surgical intervention.

#### CONCLUSIONS

(1) Cases developing toxemic symptoms should be placed in properly equipped hospital.  
(2) Mild toxemias call for careful expectant treatment, severe and early toxemias for prompt delivery.

(3) Vaginal delivery is the choice in most cases, abdominal caesarean section in primiparae developing an acute toxemia, with living babies beyond the eighth month, and not in labor, where a living baby is greatly desired.

(4) 5%, or one in eighteen or twenty pregnant women develop toxemic symptoms eliminating the chronic nephritics, 4%, or one in twenty-two to twenty-five, despite the best prenatal care.

(5) Mild toxemic symptoms reoccur in 15% to 20% of cases that have had a previous acute toxemia.

(6) Repeated pregnancies in chronic nephritics are accompanied by a steadily increasing foetal and maternal mortality.

(7) Delivery before severe toxemia develops will reduce maternal mortality.

Group #3. Children over one year

	3/11/27	2:PM	21 Mos.	7,300	40	2	0	3	43	0	Totary
14. M.D.											Chronic Nephritis
15. D.R.	12/7/26	10:AM	2 1/2 Yrs.	11,000	40	3	0	3	54	0	Auto Rheumatic Heart
16. C.A.	3/14/27	2:PM	6 "	19,300	37	8	0	0	52	3	"
17. K.C.	3/19/27	9:AM	7 "	8,500	64	1	0	0	22	13	"
18. V.M.	3/11/27	10:AM	9 1/2 "	10,500	72	2	0	1	19	6	"
19. L.T.	3/11/27	"	11 "	17,200	82	0	1	1	26	10	"
		Average		12,300	53.6	2.7	0.0	1.3	36.0	6.3	M-L Ratio 1:5.7

Children with negative Tuberculin Tests Showing epithelioid cells

	12/8/26	10 AM	20 Mos.	12,600	38	3	0	3	44	12	3	Mother died of Tb.
20. A.H.												
21. N.T.	12/9/26	3:PM	12 Mos.	5,600	28	4	0	0	53	8	3	Exposed
22. E.A.	12/19/26	9 AM	12 Mos.	13,200	41	2	0	2	41	14	2	"

well known fact that the total white count which is high at birth, diminishes throughout childhood until the adult figure is reached at about 10 years. The differential count also changes in this period, the lymphocytes being high and the polymorphs low after the first twenty-four hours. They become equal in number about the fifth or sixth year, and reach the adult ratio at about ten years of age.

In the present work the various types of cells present were averaged for each age group, mainly for the purpose of seeing approximately what the ratio of the monocytes to the lymphocytes was at different periods of childhood. From this it may be seen that the ratio in the group under twenty-four hours was 1:3.8 in group No. 2 was 1:11.6 and in group No. 3 it was 1:5.7. This latter figure is less than the ratio 1:3.46 as obtained by Sabin and coworkers from counts made on six normal adults. No other figures could be found in the literature on counts made on normal children of corresponding age periods. It should be noted that in none of these nineteen cases having negative tuberculin tests were modified monocytes or epithelioid cells found.

At the end of table No. 1 will be found a group of three children (cases 20, 21, and 22) who also had negative tuberculin tests but in whose blood modified monocytes or epithelioid cells were seen. All three of these children were under observation in the tuberculosis division of the out-patient department. All of them had given a history of exposure to tuberculosis but in each case the intradermal tuberculin test was negative. In each case the ratio of the monocytes to the lymphocytes was very low, a fact which in the light of Sabin's work points to the presence of a high degree of resistance to an acquired tuberculous infection. It is extremely interesting that the tuberculin test could be negative in very early tuberculous infection and still more interesting that the supra-vital count should show the presence of monocytes which have reacted in a manner characteristic of monocytes stimulated by tuberculosis. If more cases such as these could be worked on, it is possible that the supra-vital blood count might prove of value in the diagnosis of the earliest cases of tuberculosis!

Tables No. 2, No. 3, No. 4 and No. 5 show the results of supra-vital counts made on 19 children having positive intra-dermal tuberculin tests. These children have been divided into two groups according to whether the monocyte-lymphocyte ratio was high or low. High ratios varied from 1:1.1 to 3:6.1 while the low ratios varied from 1:2.9 down to 1:13.0. The majority of the cases fell in the last group with low ratios. It should be borne in mind that, in most of these cases it was possible to get only one or two counts and that there is considerable error in drawing conclusions on insufficient data.

The first group (See table No. 2) is composed

such children were used and the resulting supra-vital counts are shown in table No. 1. The children were divided into three age groups, group No. 1, under twenty-four hours, group No. 2, under one year, group No. 3 over one year. This grouping was made because of the

TABLE 1

Table #1. Supra-vital Counts on Children with negative Tuberculin Tests

Group #1. Children under 24 hours old.											
Case	Date	Time	Age	Total Wbo	MIN	ME	PUB	Mycol	Lym	Mono	Epith
1. M	4/14/26	9:AM	4 hrs	17,800	75	1	1	1	20	2	0
2. M	4/16/26	"	11 "	16,400	82	0	1	0	18	2	0
3. S	1/29/26	3:PM	12 "	12,600	79	2	0	0	11	8	0
Average				15,900	78.7	1.0	0.7	0.8	15.3	4.0	0
M-L Ratio 1:3.8											
Remarks											
Mother well											
"											
" Tubercular											

Group #2. Children under one year

4 R.	11/3/26	9:AM	2 Mos	11,900	58	0	0	0	34	2	0	Spina Bifida
5 G.K.	12/1/26	"	4 "	7,500	29	1	0	16	51	3	0	Malnutrition
6 W.M.	5/16/26	"	6 "	12,000	34	6	2	0	46	12	0	Acute upper Respiratory infection
7 R.S.	12/1/26	"	6 "	11,900	53	1	0	16	24	5	0	Otitis Media
8 B.D.	3/11/27	2:PM	6 "	11,200	36	0	0	4	59	3	0	Vascular Naevus
9 E.F.	11/30/26	"	9 "	7,300	45	0	0	9	45	3	0	Diarrhoea
10 B.B.	3/17/27	"	11 "	13,000	26	3	0	1	64	0	0	Milk Sensitive
11 W.J.	4/14/26	10:AM	11 "	6,500	21	0	0	0	77	2	0	Totary, Otitis Media
12 T.	3/14/27	"	11 "	14,600	26	1	0	4	63	6	0	Otitis Media
13 M.Z.	4/8/28	3:PM	12 "	10,900	34	2	1	0	60	3	0	Cleft Palate
Average				10,600	36	1.4	0.3	5.5	52.3	4.5	0	M-L Ratio 1:11.6

rate counts because the cells rounds up and lose their ameboid motion when cold

RESULTS

Practically all of the results obtained in the first year had to be discarded because the alcohol used was of improper P H Difficulty

was also encountered in learning the differential technique Unfortunately, normal children could not be obtained to use as control cases Therefore, control counts had to be made on children who were patients in the hospital They were considered as controls insofar as they had negative intradermal tuberculin tests Nineteen

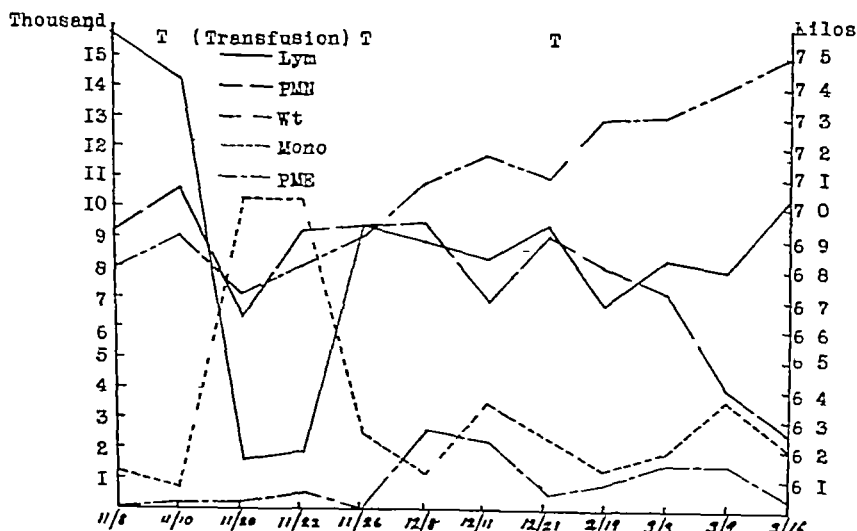
Sabin found similar abrupt changes in the blood picture in some of her animals and found it to be coincident with a marked extension of tuberculous infection, as proved both by X-ray and by anatomical findings. Other transfusions given between the counts made on November 26 and December 8 and early in February do not seem to have caused similar reactions. How-

extension of the tuberculous lesions. Clinically, too, the child seems to have been worse during this period, the weight curve especially indicating that he was not doing well. The sudden change back to nearly the original monocyte-lymphocyte ratio between December 22 and 26 would indicate that the tuberculous extension was very quickly checked. Sabin<sup>4</sup> also noticed

Table #3 Case #27 (Low Monocyte Lymphocyte Level)

Date	Time	Total Wbc	PMN	PME	PMB	Kyel	Lym	Mono	Epith.
11/ 8/26	9 50AM	26,000	35	0	0	0	60	5	0
11/10/26	"	24,000	41	1	0	0	55	3	0
11/20/26	"	18,100	34	1	0	0	9	56	25
11/22/26	"	22,000	42	2	0	0	10	46	15
11/26/26	"	23,400	40	0	0	9	40	11	5
12/ 8/26	"	22,900	41	12	0	3	39	5	0
12/11/26	"	22,600	31	20	1	6	37	16	7
12/21/26	"	21,500	42	2	0	2	44	10	1
2/19/27	"	17,200	47	3	0	2	40	8	3
3/ 3/27	11 AM	19,400	57	8	0	2	43	10	2
3/ 9/27	3 PM	17,200	23	9	0	0	46	22	2
3/16/27	"	15,500	17	2	0	1	67	13	2

CHART 1



Please note that to conserve space the dates have been spaced equal distances apart, but do not correspond to equal time intervals.

ever, the counts did not follow so closely after the transfusions at these times, and the reaction may have been completed if there was one. It should be noted that after the fall in the monocyte curve was completed December 22, there occurred a marked rise in the eosinophilic curve. This remained high throughout the early half of December and then fell gradually to the normal level. This fact adds considerable weight to the theory that the marked change in the blood picture was due to an extension of the tuberculous process. Gardner<sup>5</sup> found an eosinophilia in guinea pigs following a re-infection or

this quick return of the blood picture in her animals. Throughout the remainder of the experiment the ratio of the monocytes to the lymphocytes remained low except for the slight increases on December 11 and March 9. This indicates, possibly, that the child's general resistance to tuberculous infection is quite high but that he is subject to occasional brief periods of extension of the lesions which are promptly checked. Another evidence that he is doing fairly well is that there has been a steady though slight gain in weight and a gradual reduction in temperature throughout his stay in the hospital.

of four cases, all of which had high monocyte-lymphocyte ratios

CASE No 23 E J Age 4 years (See table No 2) admitted 11/12/26 was operated on for intestinal obstruction Extensive tuberculous peritonitis was found Tubercle bacilli were isolated from tissue removal for biopsy

state of semi coma She was put in this group because of the high monocyte lymphocyte ratio The strongly positive tuberculin test, together with the high monocyte-lymphocyte ratio and the existence of extensive lung pathology certainly point to the existence of an active tuberculous lesion in spite of the lack of more definite proof When she left the hospital two months after admission her lungs were

TABLE 2

Table #2. Tuberculin Positive Children having High M-L Ratios

Case	Date	Time	Age	Total Wbc	PMN	PME	PMU	Myel	Lym	Mono	Ep
23	11/24/26	9:AM	4 yr.	12,600	73	0	1	0	13	10	2
	11/27/26	"	"	12,700	68	0	0	1	17	16	6
24	12/21/26	2-PM	4 "	15,300	71	0	0	3	14	12	0
25	11/17/26	10-AM	6 "	19,000	86	0	0	0	3	11	1
	11/18/26	3-PM	"	11,000	86	0	0	0	4	10	5
26	12/17/26	2:PM	8 "	22,700	75	0	1	3	8	15	1

11/24/26 Ratio of monocytes to lymphocytes 1 13

11/27/26 Ratio of monocytes to lymphocytes 1 10

Epithelioid cells were found on both counts If curves were drawn of the monocytes and lymphocytes in this child, they would converge The monocytes were increasing faster than the lymphocytes

The high ratios which existed here, together with the extensive tuberculous lesions found at operation form a very significant combination one which Sabin<sup>4</sup> pointed out was present in all her animals which showed low resistance to tuberculosis

CASE No 24 B M Age 4 yrs Admitted 12/9/26 was operated upon for appendicitis Generalized peritonitis was found On 12/10/26 tubercle bacilli were isolated from material taken for biopsy, 12/21/26 total Wbc 12,700 M L (Monocyte-Lymphocyte) ratio 1 11 No epithelioid cells or modified monocytes were seen at this time, but the fact that they were not always present in other cases, appearing one time and not the next, does not make this of great moment. The patient died 12/26/26 Autopsy showed generalized tuberculosis involving lungs, pleura, appendix and peritoneum Here again a high monocyte lymphocyte ratio is associated with a very active tuberculous infection as shown by biopsy and autopsy

CASE No 25 D M Age 6 years Admitted 11/10/26 This child had tuberculous meningitis Tubercle bacilli were isolated from the cerebro spinal fluid

11/17/26 Total Wbc 19,000 M L ratio = 3 6 1

11/18/26 Total Wbc 11,000 M L ratio = 2 5 1

Epithelioid cells were seen in both preparations The patient died six hours after the last count. At autopsy very extensive microscopic tubercle formation was found along the vessels on the base and sides of the brain, caseation of the hilic lymph nodes and chronic and acute proliferative and exudative pulmonary tuberculosis Again the high monocyte-lymphocyte ratio existed with extensive active tuberculosis as proved by anatomical findings<sup>1</sup>

CASE No 26 E L Age 8 years Admitted 12/13/26 This child had lobar pneumonia and the only evidence pointing towards tuberculosis was a strongly positive tuberculin test. Tubercle bacilli were never recovered from the sputum

12/17/26 Wbs 22,700 M L ratio 1 6 1

Epithelioid cells were seen The child was in a

nearly clear, but she was running a daily afternoon temperature

This completes group No 1 of children having positive intradermal tuberculin tests and a high monocyte-lymphocyte ratio The most striking feature observed is that in three of these cases, the high M-L ratio existed side by side with low clinical resistance to tuberculosis, and extensive active tuberculous lesions as shown anatomically This is exactly what Sabin and coworkers<sup>4</sup> found in certain of their experimental animals

The second group is composed of 15 cases having positive tuberculin tests and relatively low monocyte-lymphocyte ratios

CASE No 27 (See Table No 3) C M Age 7 months Admitted 10/21/26 He had pulmonary tuberculosis Tubercle bacilli were found in his gastric contents His admission weight was 6400 gms The blood picture weight curve, and the relation between the monocytes and lymphocytes may best be followed in chart No 1 Throughout his stay in the hospital he received ultraviolet light therapy Between the second and third counts on November 17, 18 and 19 he received three intraperitoneal transfusions of 120 cc of blood and between the 5th and 6th counts, on November 30 and December 1 and 2 he received 100 cc of blood intraperitoneally and again on February 5 In the early part of February the child had an acute upper respiratory infection, and bilateral otitis media. Both ear drums were incised

In following the blood picture (Chart No 1) the most striking feature seems to be the sudden rise in the monocytes and equally sudden fall in the lymphocytes which occurred sometime between November 10 and 20, and which was maintained until the 22d In checking this over with the protocol given above, it will be noticed that transfusions were given on each of the three preceding days There was a much less marked fall of the neutrophilic curve at the same time The reaction to the transfusion itself may account for some of this, but it does not seem possible that it can account for all of it

process The marked reaction of the lymphocytes to these shows an ever increasing resistance on the part of the child Each rise in the monocyte curve has been followed by a moderate rise in the eosinophilic curve, which was thought to substantiate the idea that slight extension of the lesion was occurring The clinical picture, as judged by the steady though slight gain in weight and the gradual lowering of the temperature curve shows a steady, slow improvement

X ray showed enlargement of the bronchial nodes and some clouding of the parenchyma of both lungs Organisms were never recovered from the sputum in this case The blood picture is shown in Chart No 3

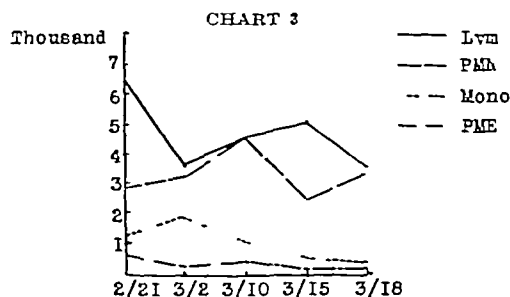
2/21/27 Total Wbc. 11 500  
3/ 2/27 Total Wbc 9 200 Child transferred from Isolation to non-contagious ward  
3/10/27 Total Wbc. 11 200 Child has acute bronchitis  
3/15/27 Total Wbc 8 800 Child much better  
3/18/27 Total Wbc. 8 000 Child improving

TABLE 5

Table #5. Tuberculin positive Children with low M.L. Ratios

Case	Date	Time	Total Wbc.	PMN	PMA	PMB	Myel	Lymph	Mono	Epith.
29	2/21/27	10 AM	11,500	26	5	0	2	55	12	0
	3/2/27	3 PM	9,200	38	3	0	0	40	21	10
	3/10/27	"	11,200	42	3	0	2	42	11	0
	3/15/27	10 AM	8,800	28	3	0	4	58	7	0
	3/18/27	"	8,000	44	4	0	1	45	6	0
30	3/5/27	2 PM	---	35	4	0	3	52	6	1
31.	12/16/26	9 AM	7,500	16	0	0	4	72	8	2
32.	2/17/27	3 PM	11,500	68	2	0	1	31	8	1
	2/28/27	2 PM	16,500	71	0	0	0	21	8	3
	3/18/27	9 AM	7,400	45	2	0	0	40	13	2
33.	3/16/27	10 AM	11,500	67	2	0	1	23	7	1
34.	3/16/27	"	7,500	52	3	0	0	38	7	0
35.	2/23/27	12:AM	9,400	66	1	0	0	36	7	2
36.	12/13/26	9:AM	9,600	67	3	0	5	20	7	5
37.	12/7/26	"	13,900	57	5	0	5	38	0	0
	12/10/26	"	11,000	63	7	0	2	26	2	1
38	12/22/27	10 AM	13,900	78	0	0	2	17	3	1
39.	12/21/27	9 AM	9,000	39	12	0	3	41	5	1
40.	3/17/27	10 AM	9,900	58	1	0	2	28	11	3
41.	3/ 4/27	2:PM	10,400	77	2	0	1	12	8	0

throughout the child's stay in the hospital In both of these cases a low monocyte-lymphocyte ratio has accompanied clinical signs, pointing to



a reasonably fair amount of resistance to extension of the tuberculous process

CASE No 29 (See table No 5) H S Age 18 mos Admitted 1/27/27 This child was also exposed to a mother who had active pulmonary tuberculosis She was admitted because of an upper respiratory infection. She was well nourished and did not appear ill Her tuberculin test was positive

Numerous epithelioid cells were seen on 3/2/27 the highest point in the monocyte curve and the lowest point of the lymphocyte curve but they were not seen again The highest monocyte-lymphocyte ratio was 1.19 on this date Following this there seems to have been a marked lowering of this ratio which Sabin thinks is evidence of increasing resistance to tuberculosis The slight raising of this ratio on 3/18 may or may not have been due to an extension of the tuberculous lesion as the monocytes did not rise The general resistance of this child is high as judged by the blood picture and this is borne out by the clinical picture

CASE No 30 (See Table No 5) M P Age 18 mos Admitted 2/7/27 This child was sent in to the hospital because of slight unexplained afternoon fever and cough of 3 weeks duration. She was found to have cervical adenitis otitis media and an acute upper respiratory infection The only evidence of tuberculosis was a positive intradermal tuberculin test and the X ray findings The latter showed a few calcified cervical nodes and slight fibrosis and beading about both hilus regions Only one count was made on this child (3/5/27) but one epithelioid cell was seen at this time, indicating the existence of an active tuberculous process. The monocyte-lymphocyte ratio was very low 1.57 and this taken with

It looks as though his chances for recovery are fair

CASE No 28 (See table No 4) V O Age 11 months  
Admitted 7/26/26 The child had an acute bronchi-  
tis and gave a history of exposure to tuberculosis  
through her mother, who has an active pulmonary

November 10 and 26 Whether this case had  
such a reaction after the transfusions given in  
October cannot be told, as the first count was not  
made until two weeks later The reaction to  
subsequent transfusions in both cases seems to  
have affected the blood pictures little, if any

Table #4 Case 28 (Low Monocyte-Lymphoc to Level)

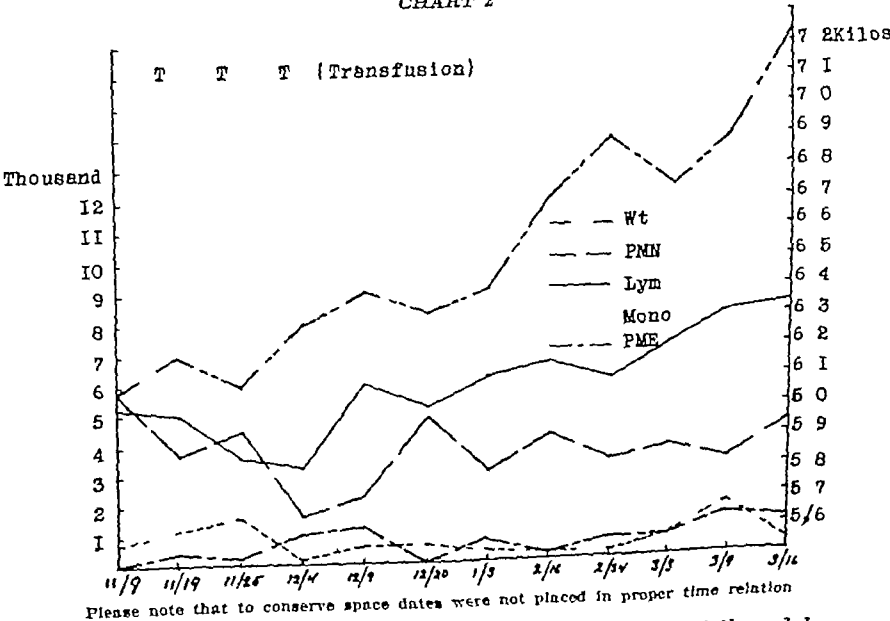
Date	Time	Total Wbc	PMN	PME	PMB	Myol	Lym	Mono	Epith.
11/ 9/26	2 PM	12,100	49	0	0	0	44	7	0
11/19/26	"	10,800	36	4	0	0	48	12	1
11/25/26	9 AM	10,600	42	2	0	4	36	18	2
12/ 4/26	"	6,300	28	16	0	3	51	2	0
12/ 9/26	"	10,000	21	11	0	4	67	7	3
12/20/26	3 PM	11,200	44	0	0	5	46	5	1
1/ 3/27	10 AM	10,500	29	7	0	1	59	4	0
2/16/27	3 PM	11,000	38	1	0	0	60	1	0
2/24/27	"	10,600	32	6	0	2	58	3	0
3/3/27	2 PM	12,100	29	5	0	2	59	5	2
5/ 9/27	"	15,100	21	9	0	5	64	11	1
3/16/27	"	14,500	31	8	0	1	58	2	0

lesion X ray showed considerable shadow in the  
hilus region on both sides Tubercle bacilli were  
isolated from her gastric contents

Throughout her stay in the hospital she received  
ultra violet light therapy daily On October 20 and  
23 she was given 100 cc of blood intraperitoneally  
On November 17 she received 120 cc of blood on  
November 30 and on December 2, 120 cc of blood  
The relation between the various types of blood cells  
and the weight may be followed over a long period  
in chart No 2

The point of lowest resistance in this case, as  
measured by Sabin's standards, seems to have  
occurred on November 25th, at which time the  
monocyte-lymphocyte ratio was 1 22 This just  
preceded the lowest total white count and was  
followed by a moderate eosinophilia, all of which  
points to the occurrence of a slight extension of  
the tuberculous lesion at this time After De-  
cember 4 each slight rise in the monocyte count

CHART 2



As can be seen on comparing charts No 1 and  
No 2, they are roughly similar with the excep-  
tion of the one period of reversal of the mono-  
cyte-lymphocyte ratio in chart No 1 between  
was accompanied or followed by a greater rise  
in the lymphocytes These slight rises in the  
monocyte curve have been interpreted as being  
caused by slight extensions of the tuberculous

majority of these children had monocyte-lymphocyte ratios above 1.5. Corresponding to these low ratios most of the cases showed fairly high clinical resistance. Two of them, followed over long periods, showed considerable clinical improvement throughout their stay in the hospital.

In case No. 27 there was a marked reversal of the monocyte-lymphocyte ratio at a time when the patient was not doing very well. This was followed by a moderate eosinophilia. At other times in this case and in the succeeding case when the monocyte-lymphocyte ratio became temporarily higher, the period was followed by a slight eosinophilia. Those periods were interpreted as being associated with slight extension of the tuberculous processes.

#### SUMMARY

1. Nineteen counts were made on a corresponding number of children with negative tuberculin tests. These were grouped into 3 age periods, the first, under 24 hrs. old, the second, under 1 year old, the third between 1 and 11 yrs. old. The average monocyte-lymphocyte ratios in the respective age groups were first 1.37, second, 1.116, third, 1.57. No modified monocytes or epithelioid cells were found in any of these groups.

2. Three counts were made on children with negative tuberculin tests in whom there was reason to suspect the existence of tuberculosis. Modified monocytes or epithelioid cells were found in all three counts.

3. Counts were made on nineteen children with positive tuberculin tests. Four of these children had very high monocyte-lymphocyte ratios above 1.1. In three of these four the existence of extensive active tuberculosis was found anatomically. The other fifteen children of this group had ratios below 1.1 and showed fair degrees of clinical resistance to tuberculosis. Epithelioid cells or modified monocytes were practically always present in the blood stream of these children with positive tuberculin tests. In one child of the last group (No. 27) there was a brief period in which the monocytes were more numerous than the lymphocytes. This was followed by a moderate eosinophilia. Peaks in the monocyte curves were usually accompanied by depressions in the lymphocyte curves, and were followed by slight eosinophilia.

#### CONCLUSIONS

1. Modified monocytes or epithelioid cells are almost constantly present in the blood stream of patients having active tuberculosis. They are thought not to be present in the blood in other common diseases or in healthy persons. How

far this is true, can only be determined by studying the blood in all other diseases. Sabin has shown them to be present in Malta fever.

2. Monocytes, including modified types, become more numerous in the blood when extensive tuberculous lesions are present.

3. A rise in the monocyte level of the blood is usually accompanied by a fall in the lymphocyte level. At such times extension of tuberculous lesions has been shown.

4. Moderate eosinophilia follows periods in which the monocyte-lymphocyte ratio has been raised. This is further evidence that extension of tuberculous processes has occurred.

5. When the monocytes of the blood are more numerous than the lymphocytes there exist widespread tuberculous lesions and the patient is said to have very low resistance.

6. When the monocytes of the blood are very much less numerous than the lymphocytes the patient usually shows high resistance to tuberculosis and the tuberculous lesions are assumed to be slight or healing.

7. Modified monocytes or epithelioid cells may appear in the blood stream in incipient tuberculosis before the intradermal tuberculin test is positive.

8. The work of Sabin and coworkers has a clinical application in the diagnosis and prognosis of tuberculosis in infants and children.

The writer feels that the small number of cases studied and the brief amount of study put on them is insufficient to make these conclusions very accurate. The work should be checked up on a larger series.

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Taken from the paper given before the National Tuberculosis Association in Washington in 1925.

In presenting this thesis I express my appreciation to Dr. Dunham of the Department of Pediatrics of the Yale School of Medicine and to Drs. Sabin and Doan of the Rockefeller Institute of New York, for valuable help and suggestions.



the fact that her temperature had come down, and that she was gaining in weight, was taken to mean that she had a high resistance to her infection at this time

CASE No 31 (See table No 5) A R Age 18 mos This child was seen once in the tuberculosis division of the outpatient department. She had been exposed to tuberculosis through her father and had a positive tuberculin test. She is suspected of having an active lesion 12/16/26 Wbc 7,500 Two epithelioid cells were seen which confirm this suspicion. However, the M L ratio was very low 1 90, so that she may be considered as having a high resistance to the disease

CASE No 32 (See table No 5) A S Age 2½ years Brother of case No 29 Also exposed to a tuberculous mother. He was admitted 1/27/27 because of a cough and intermittent daily fever and an upper respiratory infection. He had a positive tuberculin test and showed signs of tracheo-bronchial gland tuberculosis on X ray examination

2/17/27 Total Wbc 11,500 M L ratio 1 40

2/28/27 Total Wbc 16,500 M L ratio 1 26

3/18/27 Total Wbc 7,400 M L ratio 1 30

Epithelioid cells were seen in all counts made on this boy. His resistance as shown by the blood picture when first seen was fairly high, but was much lower 11 days later, and three weeks later was rising. One cannot say from one blood count or from three which are widely spaced whether the individual has a high or a low resistance to tuberculous invasion. The blood counts must be made frequently over long periods to make certain of this point. This boy probably would show a fairly high degree of resistance if followed in this way. Clinically he is a well nourished child who is gaining slowly and whose temperature is coming down

CASE No 33 (See table No 5) A K Age 3 yrs Has been in the hospital about 2 yrs because of pulmonary tuberculosis, cervical adenitis and tuberculous osteomyelitis. She has been under helio and ultraviolet therapy most of this time and is now (3/16/27) quite well. The count on this date showed 11,300 Wbc and an M L ratio of 1 32. One modified monocyte was seen. The presence of the modified monocyte indicates that there is still an active focus, while the M L ratio points to a fair degree of resistance to infection at this time

CASE No 34 (See table No 5) E L Age 4 yrs This girl has been in the hospital on a plaster shell nearly two years because of Potts disease. X ray shows some increased density in the hilus regions of the lungs. The child is getting ultraviolet and heliotherapy and seems to be making some improvement clinically. No epithelioid cells or modified monocytes were seen in the one count done (3/16/27) but would probably be seen if more counts could be made. The M L ratio was 1 54 which indicates a high degree of resistance. From this standpoint the outlook seems favorable at present

CASE No 35 (See table No 5) Y R Age 5 yrs This girl has a history of exposure to a tuberculous father. X ray shows clouding in both hilus regions. Her tuberculin is positive. Tubercle bacilli were never isolated from the sputum. Account was made 2/23/27 the day before she was taken to a sanitarium. She had bronchitis at this time and was very pale and emaciated. Her total count was low for a five year old child (9,400) though not below the lower limits for the age. Two epithelioid cells were seen. The M L ratio was 1 51. This indicates a high degree of resistance to tuberculosis but clinically she shows low resistance. If more counts could have been made in this case, the high resistance indicated

cytologically might prove to have been only temporary

CASE No 36 W S Age 6 yrs (See table No 5) The evidence for tuberculosis in this case was based on the presence of cervical adenitis, positive tuberculin test, and the presence of giant cells in tonsils removed at operation. No tubercle formation was observed in the latter and no tubercle bacilli were isolated from the tonsils. The child was in the hospital only a few weeks

12/13/26 Wbc 9,600 Five epithelioid cells were seen. The M L ratio was 1 29. While this ratio is not very low compared with the others of this group it cannot be considered with the high ratio group. The boy has less than normal resistance, but seems to be holding his own clinically

CASE No 37 W B Age 6½ yrs (See table No 5) This boy was exposed to tuberculosis through his mother. He has a positive tuberculin test, and cervical adenitis. Tubercle bacilli were never isolated from the sputum. In the first count, 12/7/26, no monocytes were found but on 12/12/26, two were seen, one of which was of the modified monocyte type. The monocyte lymphocyte ratio was very low, 1 139 indicating a high degree of resistance at the time of the last count. His stay in the hospital was brief

CASE No 38 H T Age 7 (See table No 5) This girl was seen in the outpatient department and was suspected of having tuberculosis on the basis of X ray findings of calcified abdominal glands and a positive tuberculin test. She had suggestive lung signs

12/22/26 Total Wbc 13,900 M L ratio 1 56

One modified monocyte was seen. Both the blood and the X ray findings point to evidence of tuberculous infection associated with a high degree of resistance at this time

CASE No 39 J L Age 8 (See table No 5) This was a colored boy with a clinical diagnosis of pulmonary tuberculosis. X rays of the lungs were negative. Tubercle bacilli were never isolated from the sputum. The blood picture 12/2/26 showed a very low monocyte-lymphocyte ratio of 1 82. One epithelioid cell was seen. The resistance of the boy at this time was high as judged by the blood picture. Clinically he was not very sick.

CASE No 40 J B Age 9 yrs (See table No 5) Admitted to the hospital because of post-scarlatinal hemorrhagic nephritis. He had a slight afternoon temperature rise and X ray showed some slight enlargement of the hilus regions and slight fibrosis and beading of the adjacent parenchyma. He has been in contact with a tuberculous mother. His tuberculin test was positive. Three epithelioid cells were seen in his blood on 3/7/27. The M L ratio was 1 25 all of which would indicate that he has an active tuberculous lesion to which his resistance is not very great.

CASE No 41 S B Age 11 yrs (See table No 5) This boy was admitted because of acute rheumatic fever. His tuberculin test was positive. No epithelioid cells or modified monocytes were seen in this count (3/4/27) but the M L ratio 1 15 was quite a bit higher than others of this group. This would make it seem that he had a tuberculous lesion. The fact that no modified monocytes or epithelioid cells were seen in this count does not rule out this possibility. In other active cases these cells were only present in occasional counts. If he has tuberculosis, the boy certainly has lowered resistance but not as low as those seen in group No 1

This case completes the second and last group of children having positive tuberculin tests. The

pler procedure In the method to be described the only material needed is some 2 mm glass tubing and a little collodion A 2 mm tube is prepared with a flame, and a small amount of citrate taken up at one end This is followed by a few drops of blood, and the ends sealed with a drop of collodion After a vigorous shake the blood is ready for sedimentation

#### TECHNIQUE

A definite technique must be followed Glass tubing of 2 mm bore is cut into convenient lengths (15 to 20 cm) and cleansed by immersing in 5 per cent nitric acid for 12 to 24 hours The acid is thoroughly washed off in running water and the tubing finally dried with alcohol and ether A supply of tubes of 4 to 6 cm in length, with both ends drawn to capillary size, are prepared with a low bunsen flame (Fig 1a)

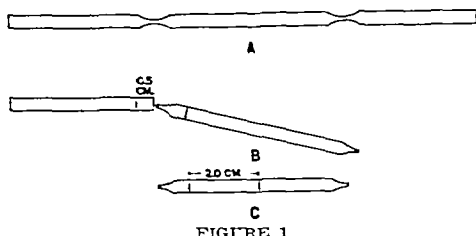


FIGURE 1

Each tube is then graduated as follows A piece of straight tubing is made into a gauge by marking with a file at a point 0.5 cm from a free end Alcohol is taken up to this mark and then transferred by capillary attraction to the tip of a prepared sedimentation tube (Fig 1b) The point of the meniscus on this tube is marked with a file and a second mark is made 2 cm above it (Fig 1c) The tip, up to the first mark represents a volume equivalent to 0.5 cm of straight tubing, and when citrate is taken up to the first mark and blood up to the second, a ratio of one to four is obtained Figure 1b shows the position used in transferring the alcohol from the gauge to the capillary tip to be marked

The ear or tip of the finger is wiped dry, and an adequate puncture made to insure a few drops of blood Sodium citrate (3.8 per cent solution) is taken up to the 0.5 cm mark of a tube and then the blood, drop by drop up to the 2.5 cm mark The tube should be held horizontally during this procedure, as in a vertical position the blood may slide down the tube and be lost Both ends are sealed with a drop of collodion applied to the tips The commercial preparation "New Skin," is very suitable The tube is now taken between thumb and forefinger and the blood end held uppermost This allows the citrate to rise to the top and mix with the blood Just holding in this position for a few seconds is sufficient to prevent clotting For a sedimentation reading, however, it is necessary to shake the column of blood vigor-

ously from one end to another, once or twice The blood is then ready for sedimentation The exact sedimentation reading is made with the ordinary celluloid centimeter rule A satisfactory stand for the tubes can be prepared by punching suitable holes in a candy box cover Care should be taken to make sure that the tube stands exactly perpendicular

#### THE NORMAL SEDIMENTATION TIME

The most popular reading, and perhaps the most practical is that at the end of a 2 hour period A complete sedimentation time requiring more than 2 hours is generally regarded as within normal limits, one less than 2 hours, as increased, and when less than one-half hour, very rapid and indicative of considerable activity (infectious or metabolic) Sedimentation in normal individuals is usually complete in about 24 hours Greisheimer<sup>5</sup> using Cutler's<sup>6</sup> technique studied the variations of corpuscular sedimentation in healthy young adults In all of 13 young men the average 2 hour reading (of from 3 to 7 carried over periods of from 5 to 9 weeks) was less than one-half the total reading at the end of 24 hours The same was true of 10 out of 18 young women In 3 subjects as much as four-fifths of the total sedimentation (24 hours) was complete in two hours In every case however the complete sedimentation required more than 2 hours Greisheimer concludes that sedimentation shows some variations from week to week that this variation is slightly more marked in women, and that the rate is slightly faster in women than in men She found no appreciable difference in the rates during and between menstrual periods

#### CONCLUSION

A simple skin puncture method for determining the sedimentation velocity of blood is presented This method does not require any special apparatus A small amount of citrate followed by a few drops of blood are taken up at one end of a prepared 2 mm tube The ends are sealed with a drop of collodion and after a vigorous shake, the blood is ready for sedimentation.

I wish to thank Dr Ralph C Larrabee for his kindness and help

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## THE DETERMINATION OF THE BLOOD SEDIMENTATION TIME WITH CAPILLARY BLOOD\*

BY DAVID DAVIS, M.D.†

WHEN whole blood is taken up in an anticoagulant and allowed to stand undisturbed, the corpuscles slowly settle to the bottom, leaving a clear layer of plasma above. In health, the rate of this sedimentation follows a constant and slow curve. With the onset of certain abnormal conditions, the sedimentation velocity becomes accelerated, and per contra, with the return to the normal state, it becomes slow again. For example, in chronic pulmonary tuberculosis<sup>1, 2</sup> an active process is closely paralleled with an increased sedimentation velocity. When this activity ceases and healing controls the spread of infection, it returns to normal.

An increased sedimentation velocity occurs whenever there is an increased destruction of tissue. This takes place in febrile conditions, in inflammatory conditions without fever, in malignancy, in thyrotoxicosis, and in pregnancy after the third month. The sedimentation test thus expresses a change in the general metabolism of the body and, in this respect, it is comparable to fever. It is a sensitive index of the presence or absence of an abnormal state. A slight infection or slight metabolic disturbance usually causes an increased velocity. In the course of an acute infection, such a change may precede the onset of leucocytosis, and, at times, it is manifest in the absence of an increased white cell count. The sedimentation velocity is not infrequently increased in mild and low grade infections, when other clinical signs are absent.

The historical, theoretical, and clinical aspects of this problem have been dealt with extensively in many recent articles. At the present time this test is very popular in Europe, and is receiving more and more attention in America. An excellent review of the subject, with references, will be found in a paper by Bochner and Wassing<sup>3</sup>.

### CLINICAL VALUE

One of the most important uses of the sedimentation test is in the study of chronic tuberculosis. In incipient pulmonary tuberculosis, when physical signs and fever are absent and the sputum negative, an increased sedimentation velocity may be the only objective indication of activity. Again, in a suspected case, a repeatedly normal sedimentation rate will usually rule out active tuberculosis. Because of its great sensitiveness, the sedimentation velocity is of prime importance in prognosis. In many of the

sanatoria in Austria and Germany, this test is used as an index of the course of the disease, and a patient is not discharged until the sedimentation time is normal. Commenting on this, Bochner and Wassing remark "Here we see the blood sedimentation test playing exactly the same rôle in the course of chronic pulmonary tuberculosis, as the complement-fixation test in the course of lues."

The sedimentation velocity is regarded as important in the differential diagnosis between an ectopic pregnancy and inflammatory disease of the adnexa. In uncomplicated ectopic pregnancy of less than three months' duration, the sedimentation velocity is normal, whereas in pelvic inflammation it is greatly increased.

In certain inflammatory conditions the surgeon waits for nature to wall off the process before interfering. The sedimentation velocity is known to become slowed as this walling off process takes place. Thus, Friedlander<sup>4</sup> considers the test of aid in deciding the time to operate in certain cases of chronic disease of the adnexa and in cecal abscesses.

For the many other uses, still in the problematic stage, the reader is referred to the large literature on this subject.

### METHODS

A number of methods for determining the sedimentation velocity are employed. These embody the same general principles. A few cc of blood are drawn from a vein and mixed with an anticoagulant, usually sodium citrate (2.4 per cent), in the proportions 1 to 4, 5, or 6 parts of blood. The proportion is easily gauged in a syringe, the citrate being taken up first and the blood drawn after. The blood is then transferred to a test tube, or specially graduated sedimentation tube, thoroughly mixed by shaking, and allowed to stand erect undisturbed. The rate of sedimentation is conveniently measured in terms of millimeters of plasma (or percentage) per unit time, or in terms of the total time required for complete sedimentation. The most popular readings are at the end of 1, 2 and 24 hours. For practical purposes the amount of blood, the dilution ratio with anticoagulant, and the size of the tube used do not appreciably influence the determination.

A few capillary methods, requiring but a few drops of blood from a skin puncture, have been described. These have the disadvantage of requiring in each instance a specially manufactured pipette. The lack of uniformity of these instruments, and the expense that the preparation of a number might incur suggested a sim-

\*From the Blood Laboratory of the Boston City Hospital, Boston, Mass.

†For record and address of author see This Week's Issue, page 775.

hospital. All of the twenty-five non-immune children so exposed and not given serum contracted measles. Of these cases four were mild, five moderate, sixteen severe, and one patient died. Two of these twenty-five cases were reported as having had measles previously, but inasmuch as they came down with the disease—one moderately and one severely—they were included in this control group of those not having acquired immunity.

omy), one severe rash, one laryngitis demanding intubation (scarlet fever case). All cases recovered.

The convalescent serum was obtained from adults and older children. These sera were all Wassermann negative, and were run through a Berkefeld filter. The dose was 5 cc given intramuscularly\*.

The difference in the mortality is less significant when the details are gone into. In each

Received no convalescent serum	Number exposed	Number escaped	Came down with measles	Mild measles	Moderate measles	Severe measles	Died	Bronchopneumonia	Intubed
SCARLET	21	0	21	3	2	16	1	2	1
DIPHTHERIA	4	0	4	1	3	0	0	0	0
TOTAL	25	0	25	4	5	16	1	2	1
Received 5 cc convalescent serum									
SCARLET	42	33	9	8	0	1	0	1	1
DIPHTHERIA	9	4	5	4	1	0	0	0	0
TOTAL	51	37	14	12	1	1	0	1	1
TOTAL OF ALL CASES	76	37	39	16	6	17	1	3	2

Percentages are not given because the series is too small for percentage figures to be of real value and furthermore such factors as the age and the condition of the patient at the time of administration of the serum cannot be included.

Among fifty-one cases of exposure (with no history of previous measles) to whom convalescent serum was administered only fourteen developed measles. In other words thirty-seven of the fifty-one did not develop measles at all. Koplik spots developed in six of these fourteen cases within three days of the administration of the serum. In seven cases measles developed although the serum was given at least three days before the appearance of the Kopliks.<sup>2</sup> Of the fourteen cases one was truly severe (a convalescent scarlet fever). Another convalescent scarlet fever with a mild measles rash developed a severe laryngitis and had to be intubated. One diphtheria tracheotomy case with a bronchitis developed a moderate case of measles augmenting the bronchitis. There were twelve mild cases, one moderate case (previous tracheot-

group there was one severe laryngitis accompanying the measles demanding intubation. In the case not given serum, the patient on admission had a very severe scarlet fever and a positive diphtheria throat culture. Five weeks after admission the child developed severe measles with bronchopneumonia and had to be intubated for a marked laryngeal constriction. Bronchopneumonia was the cause of death.

The other measles case which required intubation but received the convalescent serum caused us quite as much anxiety. This case was admitted as scarlet fever having been transferred from the children's ward of a general hospital, where it had been under treatment for tuberculous prelitus. One month after admission it was exposed to measles through the outbreak of a case in close proximity in the ward. Convalescent measles serum was given. Kopliks and a mild rash developed. With the rash a laryngitis developed which became unduly severe. Eventually the constriction demanded intuba-

\*In five convalescent diphtheria cases not included in this series, whose convalescent blood was injected, three cases received 10 cc. each, one 5 cc. and one 1 cc. None of these five exposures developed measles although all five were reported as never having had measles.

<sup>2</sup>Ordinarily it is desirable to give the serum late in the incubation period in order to allow a mild measles to take place so that a permanent immunity may be established because when the serum is given early enough to prevent measles the passive immunity may last only two months. The acquisition of an active immunity to a common contagious disease is often times as valuable an attainment of childhood as a subject learned in school. But the worst time to acquire an active immunity for measles would appear to be before the age of five or during the course of an upper respiratory tract disease. Various factors beyond our control governed the time of administration of the serum in this series.

## REPORT OF CONVALESCENT MEASLES SERUM ADMINISTRATION IN CASES EXPOSED TO MEASLES DURING THE COURSE OF SCARLET FEVER AND DIPHTHERIA\*

BY CONRAD WESSELHOEFT, M.D., AND FAITH FAIRFIELD GORDON, M.D.†

THE purpose of this report is to add to the cumulation of evidence in support of the value of convalescent measles serum in subduing an outbreak of measles in an institution.<sup>1</sup> Measles is regarded with different degrees of awe according to when and where it breaks out. The average family physician apparently looks upon the disease as an inevitable storm in the course of an individual's development. He regards it as a sudden squall which is quickly over, and which only occasionally brings any real worry or disaster, particularly if the patient is put to bed with the first symptoms. Our experience outside the hospital causes us to subscribe to this view. The public health official, whose prognosis of a disease rests upon the mortality statistics from all available sources, is apt to take a more gloomy view of measles. The third point of view is that of the hospital physician. Here again it varies according to the nature of the hospital. One fact stands out clearly in the statistics, namely, the mortality is very much greater in children under five years of age. However, it is generally conceded that the advent of measles is more undesirable during the course of diseases involving the upper respiratory tract, especially scarlet fever and diphtheria. This report deals with an outbreak of measles in scarlet fever and diphtheria wings of a contagious hospital in the winter months.

We admit that theoretically measles should not be allowed to gain headway in an institution whose staff is trained in the art of isolation in contact and droplet infections. We plead guilty of allowing this to take place in our wards on more than one occasion, in spite of precautionary measures, knowing full well that the same situation develops in other contagious hospitals.

Measles, mumps, and chickenpox gain admission to our scarlet fever and diphtheria wards through exposure previous to admission. Thus a child admitted with diphtheria or scarlet fever may come down with measles a week after admission, and by the time the Koplik spots are detected a large ward is contaminated, or even an entire floor when the hospital is crowded. Inasmuch as we are under contract with certain boards of health to take in their contagious cases, we are in the position of a municipal hospital in that we find ourselves at times forced to

admit cases beyond our capacity for most efficient care. This is, of course, always true in laryngeal diphtheria, which is never refused, and to an equal extent in cases of scarlet fever requiring a mastoid operation. All this is said with the idea of conveying the fact that contagious work in private practice is of a much milder variety than that met with in a contagious hospital, the function of which is to receive cases that cannot be adequately cared for at home, either on account of the severity of the form or the complications requiring operative interference. Thus the percentage of severe and complicated cases in contagious hospitals is always greater than in outside practice.

A case which is admitted as measles offers us no insurmountable difficulties in the way of isolation, neither does a case of scarlet fever or diphtheria which we know on admission has been exposed to measles, provided we have a private room available. Of course, a case with a history of such exposure demands special isolation in the scarlet fever or diphtheria wing.

The value of a previous history of measles in connection with isolation and with the arranging of contacts is of more theoretical than practical importance. In all probability true measles confers the same degree of immunity for life as does scarlet fever. But a great many cases of German measles, serum rashes, and food rashes are diagnosed as measles.<sup>2</sup> This accounts for the prevalent notion among the laity that one can have measles several times. Recurrent cases of measles, scarlet fever, and mumps do occur, it is true, but such loss of immunity is so exceptional that those who have actually had these diseases may for practical purposes be regarded as immune contacts.

From the point of view of the family physician, convalescent serum is not a necessary part of the armamentarium in the therapeutics of measles, except under the unusual circumstances (just described) that may occur in the scarlet fever and diphtheria wards of a hospital. The purpose, then, of this report is to furnish proof of its efficacy under such circumstances.

At a time when measles was prevalent in and about Boston, this disease got headway both in the diphtheria and scarlet fever wings of the

\*From the Haynes Memorial Hospital Boston Mass. (Contagious Department, Massachusetts Homeopathic Hospital).

†For records and addresses of authors see "This Week's Issue" page 775.

<sup>1</sup>For a concise essay on the subject the reader is referred to "The use of convalescent serum in the prophylaxis of measles" Weaver G. H. and Crooks T. T. Jour. A. M. A. Jan. 19 1924 52 p. 204.

<sup>2</sup>One of us (Wesselhoeft) after twelve years of hospital experience with contagious diseases diagnosed a case in his family practice as measles. He became suspicious of his error when no further cases developed and so informed the mother who "knew" she had had measles three times. The next year this same boy contracted true measles and gave it to his brother and sister—but not to his mother. Of course the case was reported both times as measles to the board of health and helped to swell the statistical errors of the city county state and nation in regard to its prevalence. But such errors can no more be undone than their numbers can be estimated by those who compile statistics from all sources.

# VERMONT STATE MEDICAL SOCIETY

## POLIOMYELITIS WORK IN VERMONT

BY CHARLES F. DALTON, M.D.†

THE year 1894 marked the beginning of interest in anterior poliomyelitis in Vermont for in that year Dr Charles S. Caverly, president of the State Board of Health, studied an epidemic occurring near his home city Rutland and reported his findings in the *Yale Medical Journal*\*. This was the first study in this country of the communicable nature of the disease. It was not until 1914, however, that the State Board of Health began its intensive work connected with poliomyelitis, this being facilitated by the generous gift of an anonymous donor. Since that year, the gift has been annually renewed and sometimes largely increased, permitting an uninterrupted effort in (1) research for the epidemiological factors and (2) after-care of the crippled victims left in the wake of the various outbreaks. With the reorganization of the State Board of Health into the Department of Public Health, this work was placed in charge of the Division of Poliomyelitis.

The early advisors in the "Vermont plan" of poliomyelitis study and control were Dr Simon Flexner of the Rockefeller Institute, Dr M. J. Rosenau of Harvard and Dr Robert W. Lovett of Boston and to their wise counsel and unflinching effort is largely due the success which this division has achieved. Since the death of Dr Lovett, Dr Frank R. Ober of Boston has been the staunch supporter of the after-care work. When most of the research agencies gave up their study of this disease an agreement was entered into by the Vermont Department of Public Health and the Harvard Infantile Paralysis Commission whereby their efforts were united in the research problem and for several years Dr W. L. Aycock has been in charge of the combined work.

Vermont has been a fruitful field for the study of poliomyelitis and its after-care on account of several factors. The epidemic of 1914 with 306 cases forcibly called the attention of both physicians and laymen to this disease and the interest then aroused has never been markedly abated. Although no such epidemic has since occurred there have been enough outbreaks and menacing conditions to keep the edge on the situation and it is a very unusual case which is not brought to the attention of the Department of Health within a few hours of being seen by the physician. All cases are then followed up first by the research worker, and a little later by the after-care nurses. This service has now become an important part of the health program and is

so recognized by the doctors and the public generally. A situation has therefore naturally worked out which offers cooperation on the part of the profession and an interested expectancy on the part of the people.

It is not the object of this article to give a history of the disease in Vermont. That has been done in a volume published in memory of Dr Caverly‡. Nor is this the place to recount the findings of the research laboratory. Dr Aycock's publications in various journals constitute a contemporary comment on this work. It is desired to direct attention to the extent to which the after-care work has grown and some of the results of after-care treatment as shown by the 1927 report of the Division. This report is submitted by Miss Bertha E. Weisbrod, director and is herewith transmitted.

### YEARLY REPORT AFTER-CARE DIVISION FOR POLIOMYELITIS 1927

Number of patients on record under supervision	954
Number of patients seen during the year	589
New admissions	183
Polio	53
Onset within a year	35
Onset more than a year previous	18
Not Polio	130
Old admissions	771
(Cases admitted to treatment during previous years and still under supervision)	
Old admissions seen during the year	406
Polio	270
Not Polio	136
Old admissions not seen during the year	365
Polio	166
Not Polio	199
Clinical examinations made during the year	878
Individual cases examined at clinics	479
Home visits made during the year	601
Office visits made during the year	91
Doctors visited during the year	79
Exercises (number of patients for whom prescribed)	318
Total number of admissions to Hospitals	92
Total number of patients admitted	82
Total admissions for operations	74
Total number of patients operated on	66
Polio	47
Not Polio	19
Total admissions for treatment	18
Total number of patients treated	16
Polio	8
Not Polio	8
Apparatus	
New Pieces applied during the year	280
Pieces adjusted or repaired	139
Orthopedic corrections made to shoes	420

†Infantile Paralysis in Vermont published by State Department of Public Health 1924

\*Yale Medical Journal Nov. 1894.  
†For record and address of author see This Week's Issue page 755.

tion, which gave prompt relief. Extubation was performed five days later, with no further trouble from the case. Without intubation facilities at the critical time, this case would have undoubtedly been a fatality. Furthermore, the intubation of a measles case is always a most serious measure, owing to the likelihood of ulceration of the larynx. Therefore, there is not much margin between the one fatality and this serious situation which developed in the serum-treated case. However, it is worthy of note that bronchopneumonia did not develop in this case.

The serum cases and controls were run over the same period, between February 8th and April 2nd. Of those exposures to measles not given the serum, four were cases of diphtheria and twenty-one were cases of scarlet fever. Of those exposures to measles receiving the serum, nine were cases of diphtheria and forty-two were cases of scarlet fever.

*Summary* Single doses of 5 cc convalescent

measles serum proved efficacious in markedly reducing the severity of an epidemic of measles which invaded the scarlet fever and diphtheria wards. Among seventy-six patients exposed, twenty-five controls were given no serum and all twenty-five, or 100 per cent, came down with measles. Of these controls, sixteen (or 64 per cent of the exposures) had severe measles. Of the fifty-one exposures with no history of measles who were given convalescent serum only fourteen contracted measles (or 27.4 per cent), only one of whom (or 1.9 per cent of the exposures and 7.1 per cent of the fourteen cases) had a severe rash. Bronchopneumonia occurred twice in the control group and once in the serum-treated group. Intubation for measles laryngitis was necessary once in each group. Of these two cases, the one in the control group died of bronchopneumonia, and the serum-treated case recovered without bronchopneumonia.

where muscles are completely paralyzed, are showing very encouraging improvement in muscle strength, and even in the most severe cases deformities due to contractions have not developed

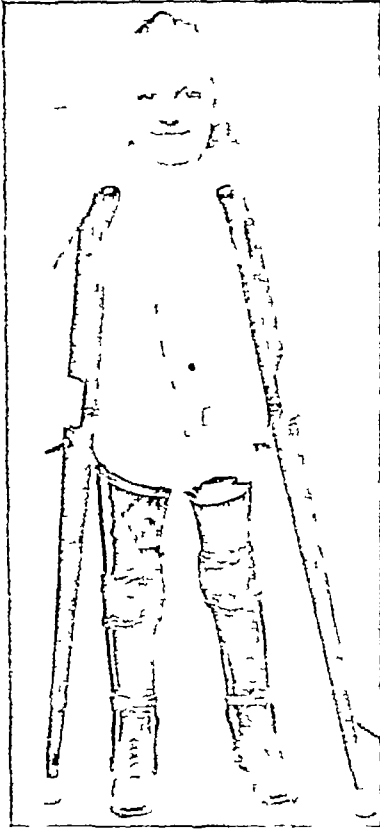
The accompanying graphic charts show the development of the work since 1920

Due to the fact that previous to 1920 records were not kept as at present it is not possible to

Children has helped with the hospital expenses of two patients who could not receive help from our Poliomyelitis Fund, has paid for board and exercises for four patients who could not be cared for in their homes, and furnished apparatus for six patients

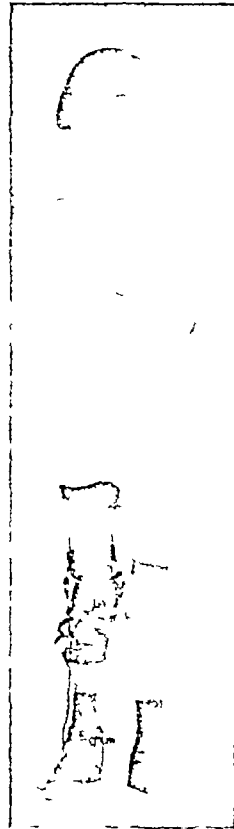
A gift of \$1000 was given to be used for special work that could not be paid for out of our regular fund This gave help to many who

Same patient leaving Hospital 1920



Reduction of Deformities  
September 1919

Same Patient December 1927



An Astragalectomy operation was performed on left foot January 1925 which enables patient to walk well with one brace

include the earlier years The work for the year 1924 cannot be charted accurately because in that year the date for the giving of our report was changed from April 1 to January 1

The charts show that the number of patients under supervision has doubled since 1920, and that the number of patients seen during the year has almost tripled

The patients under supervision have made very encouraging gain this year

Through the kindness of friends interested in the work we have been able to continue boarding six of our older patients in homes where they receive the special care that they need

The Fletcher D Proctor Fund for Crippled

otherwise would have gone without treatment

Another gift, that of a tutor for a patient who had had to lose two years of school, gave very gratifying results The patient was obliged to spend all of her time on her back, and in three months did the year's work which enabled her to enter High School Despite her crippled condition she has been on the honor roll ever since the beginning of the school year

#### REPORT OF THE CRAFT WORK IN CHARGE OF MISS VAN LINSCHOTEN

31 Patients are Craft Workers

5 New Patients have been admitted this year

5 Patients have given up the work.



## Improvement of cases shown during the year

Percentage based on 440 of cases seen as the remaining 149 could not be figured in for the following reasons

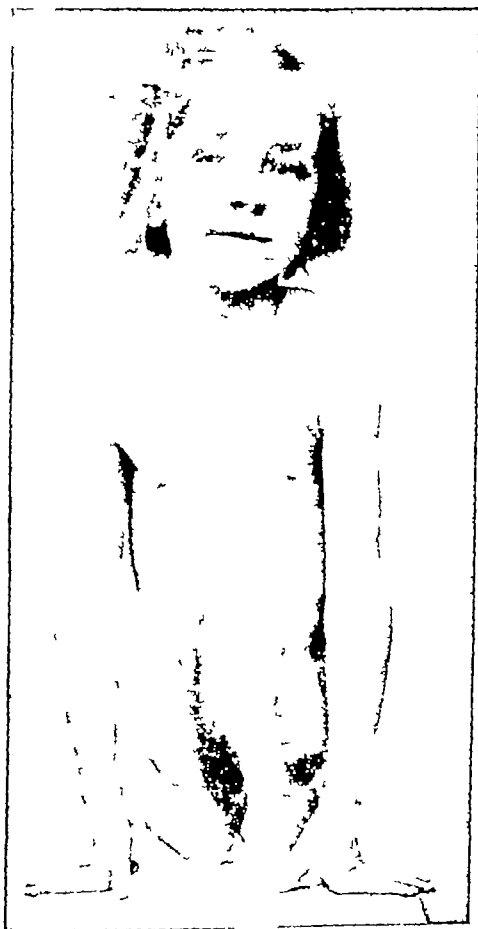
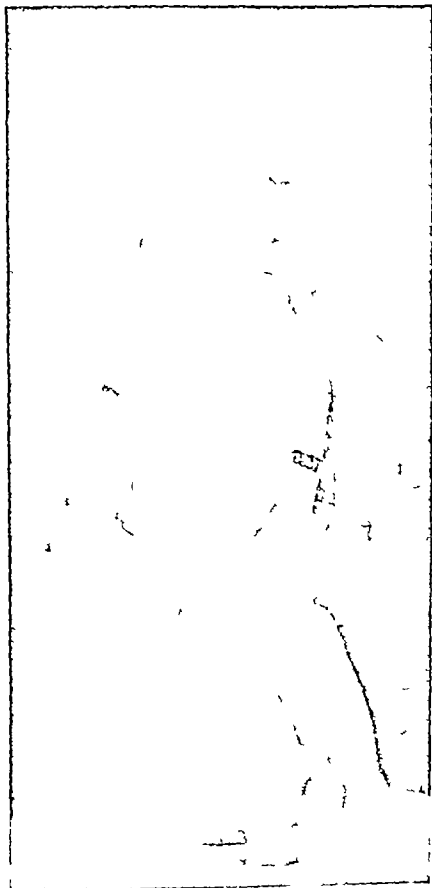
- 1 Patient came to clinic for diagnosis only and was referred back to family Doctor
- 2 Patient was from out of State and treatment was not followed up
- 3 Patient has not been seen since treatment was recommended

Per cent of cases that have followed treatment \_\_\_\_\_ 84 7

ley The May and October clinics were held by Miss Kron and myself

There were forty new cases of Poliomyelitis this year Thirty-five of these were seen by us. Thirty-one needed after-care treatment, two were abortive, one was a practical recovery, and one died Of the five cases not seen, one was abortive, two were practical recoveries, and two died

The muscle involvement has been high and the paralysis severe this year



Deformities resulting from uncared for Poliomyelitis

Double hip and knee flexion knock knees and feet turned back so that body weight was borne on dorsum of feet  
September 1919

Per cent. of cases that have improved \_\_\_\_\_ 85 4

Per cent. of cases operated on that have improved \_\_\_\_\_ 98

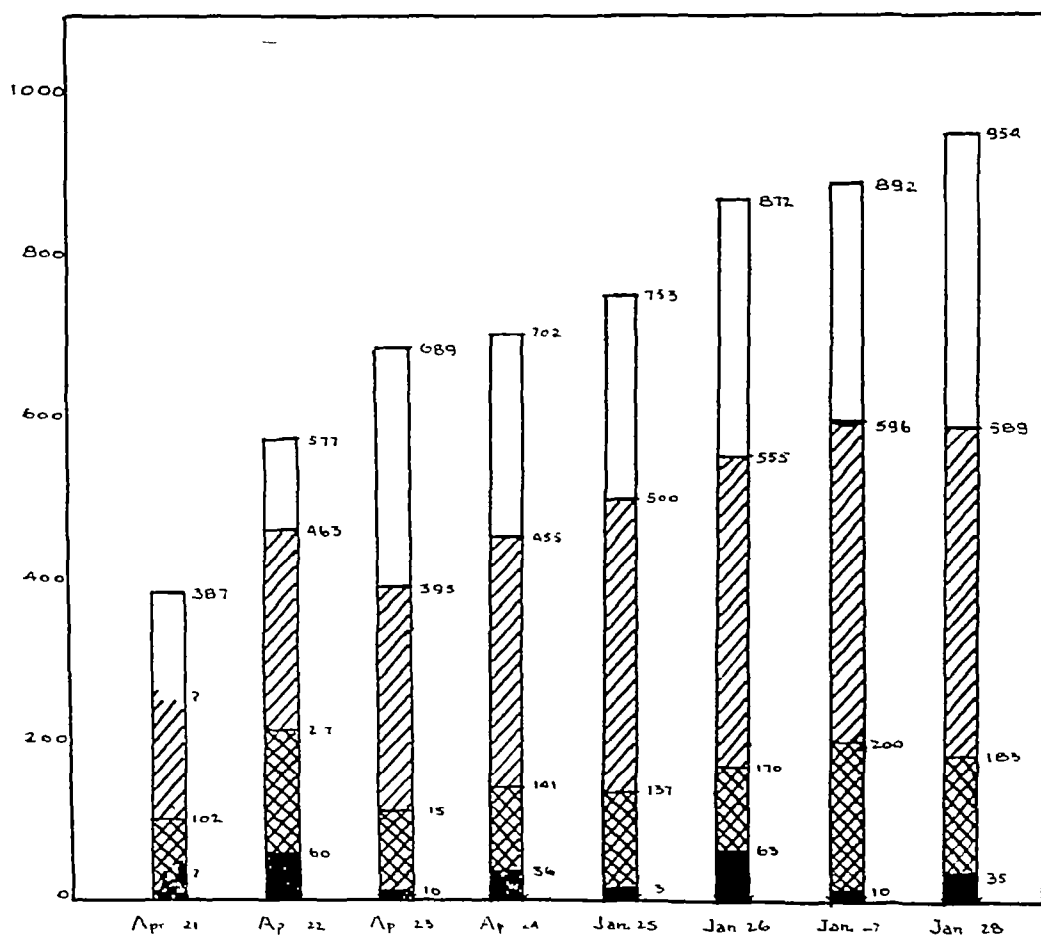
Number of patients discharged from treatment during the year \_\_\_\_\_ 199

Number of cases on record beginning the year of 1928 \_\_\_\_\_ 755

Clinics were held in May, August, and October at Rutland, Proctor, Windsor, Burlington, St Albans, Montpelier, Barre, St Johnsbury, and Barton Dr Ober saw the patients in August, and was assisted by his partner, Dr Ghorm-

In the group of thirty one cases under supervision there are thirty-two paralyzed legs Five of these are almost completely flail, and show little sign of any practical return of muscle power Twenty-four arms and shoulders were paralyzed, five of which are also practically flail, and show little sign of recovery Sixteen patients have considerable trunk paralysis

Treatment recommended is being followed faithfully by the parents of all but three of the patients These three are developing deformities The other patients, with the exception of



Total Number of Cases Under Supervision,  
Seen and Admitted Including  
Recent Cases of Poliomyelitis

1920 - 1927

at  
M.D.

Total number supervised  
seen  
- new admissions  
- number recent polio

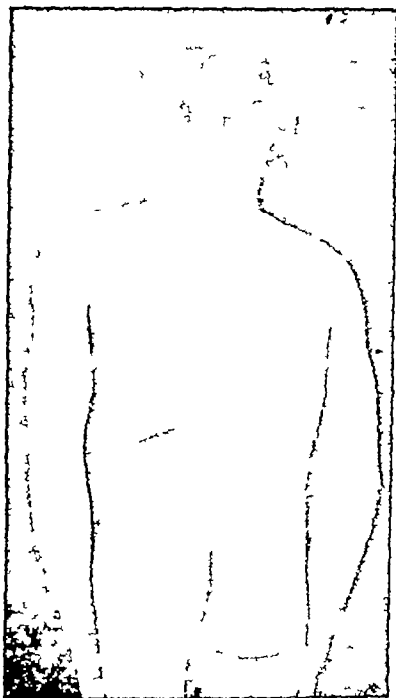
CJW  
28

- 1 has married
- 1 has returned to school
- 3 have learned a Craft that they can make and market themselves

No work has been done with the group of children at Ormsbee House

\$1416 05 has been paid to the patients this year for their work

Scoliosis resulting from Poliomyelitis March 1926



The year of 1927 has been one of progress and encouragement

The Craftsmen-at-Work Exhibition in Boston last March did much to encourage the workers and to advertise the work out of the State. The good results have been felt throughout the year, and we are pleased that it is possible for three of our Craft Workers to take part in the Exhibition which is being held again this year.

Among the new types of work that have been added this year to the Crafts already taught is Italian Quilting. A balsam pillow developed in this style of needlework is very popular.

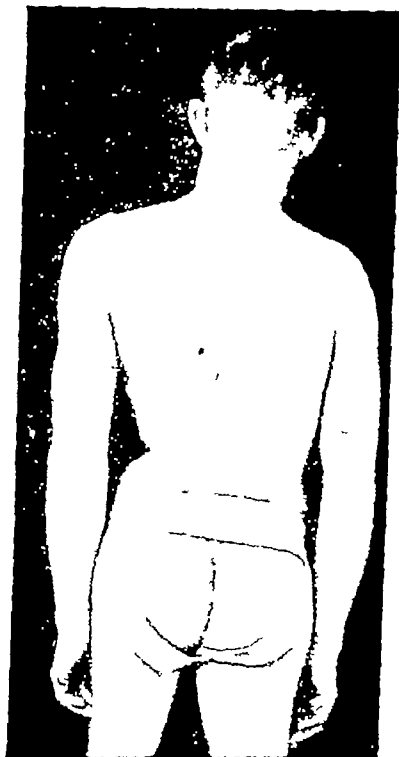
Work has been on sale at the following places: Woodstock Craft Shop, Woodstock, Everyday Bookshop, Burlington, Houck Studio, Albany, N Y, Woman's Exchange of the Oranges, East Orange, N J, Noah's Ark Gift Shop, Winchendon, Mass, Women's Educational and Indus-

trial Union, Boston, Mass, The Original Thread and Needle Shop, Boston, Mass, Woman's Exchange of Troy, N Y.

In addition to these outlets for the work we have had the following sales:

Mrs M C Twitchell of Burlington, as in previous years, kindly opened her home for a sale which was very successful.

Same Patient December 1927

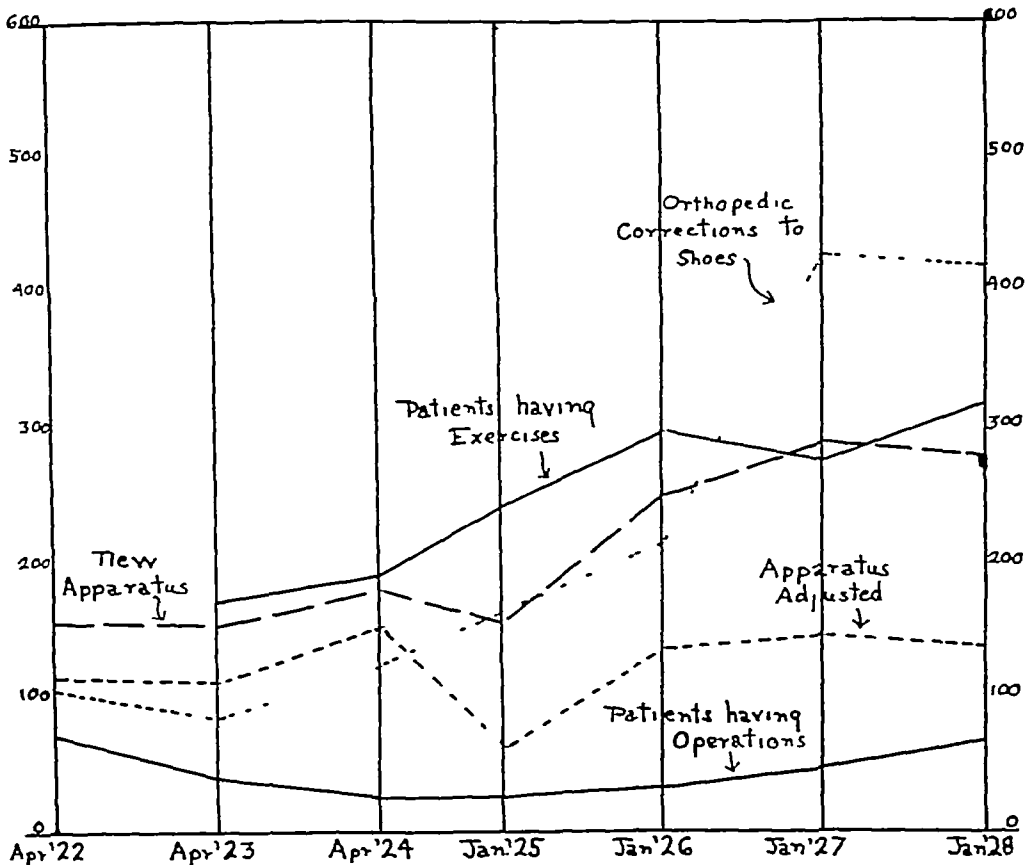


Treated three months with plaster stretching jacket followed by spine fusion June 1926.  
Patient can now hold himself erect without apparatus. Fusion solid.

The Woodstock Street Fair, held for the benefit of the Episcopal Parish House, allowed us to sell the work on a 10% commission.

The Windsor County Fair gave us the use of a free booth.

The Klifa Club, Burlington, held its annual sale for us in November. This sale was not as successful as usual because of coming soon after the flood. This failure to dispose of the work was not felt, however, because Mrs G R Critchlow held a sale for us at her home in Buffalo, N Y, before Christmas at which almost all of the articles on hand were sold.



## Treatment of Cases

1921—1927

### ELECTRO-SURGERY\*

BY WILLIAM D. McFEE, M.D.†

AT the present day, when describing the use of electricity in surgical procedures, reference in almost every instance implies the employment of high frequency electrical currents which may have different characteristics such as the damped wave produced by means of a high frequency electrical apparatus having a spark gap in circuit and the undamped wave which we get from a high frequency apparatus having radio tubes in its circuit.

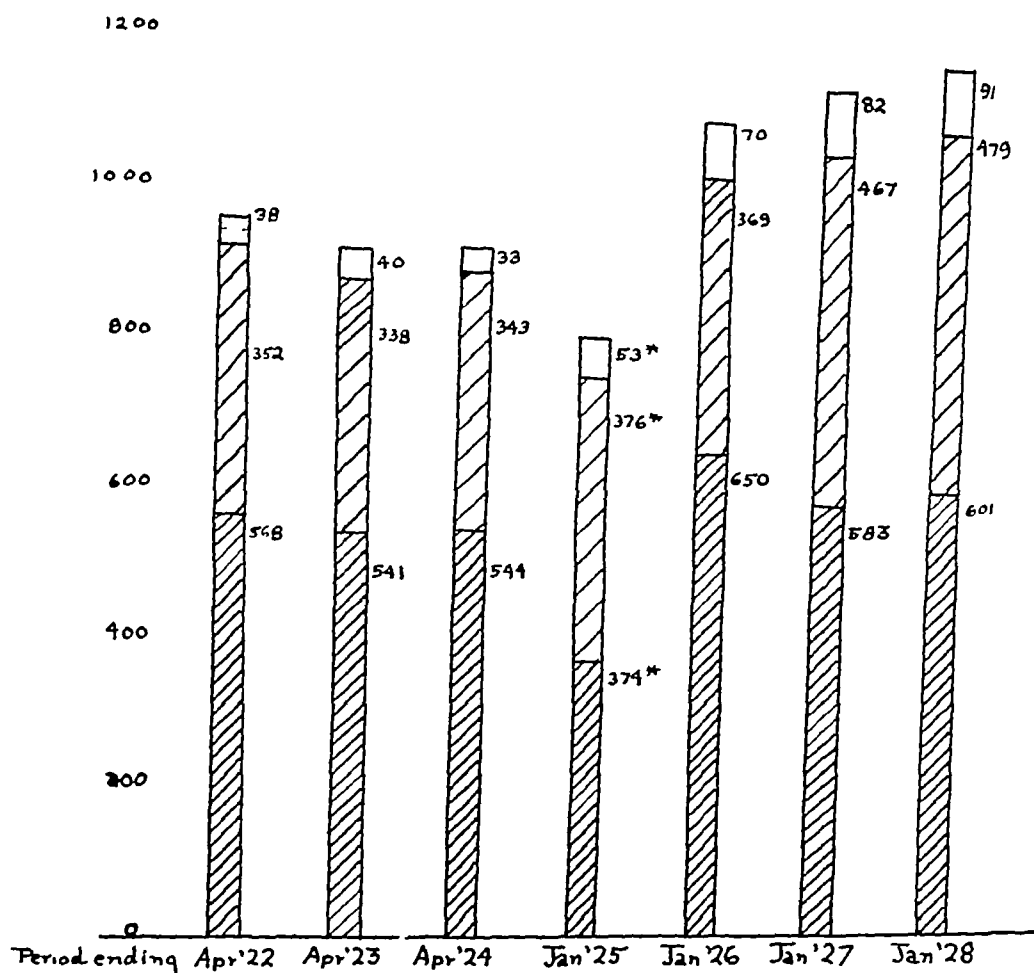
Tissue may be separated or cut through by a current from a high frequency apparatus in which the oscillating circuits are so balanced that a wave which is not more than 20% damped

is produced, or for the same purpose we may use the undamped wave high frequency current giving a constant and steady heat effect which will quickly cut its way through, an ordinary needle serving as the active electrode. This electrical action has been described by various writers using many different names, some of which are very suggestive of commercialism, conveying no expression of the particular procedure involved.

Many times attention has been called to the importance of avoiding a duplication of terms used in describing electrical current effects or methods of treatment, as this results in much confusion of ideas. And once more a plea is made, as first alluded to by the writer about ten years ago, for the more general use of the term

Read at the Annual Meeting of the Vermont State Medical Society at Middlebury October 14, 1927.

†For record and address of author see "This Week's Issue" page 775.



## Examinations at Clinics, Home and Office Visits 1921 — 1927

\* Nine months period only

Number office visits —  
clinic exams —  
" home visits —

CJW  
28

back below the angle of the scapula, general anaesthesia or local such as nerve blocking being used. The active electrode consisting of a surgical knife fitted in an insulated handle is used in contact with the tissue to be removed. The current is that delivered from a suitable high frequency apparatus of the d'Arsonval type, which will deliver a high milliamperage and remain constant in action. The current is turned on by an assistant, and gradually increased until coagulation occurs as shown by the cooked appearance of the tissue. The knife inserted just beyond and below the margin of the growth is then gradually moved through the circumference with a rotary motion the growth being lifted, as it becomes separated, with the other hand by means of a suture imbedded in the structure or by forceps. This is continued until entire removal is accomplished. If conditions and technique are correct no bleeding results and a clean seared surface is assured. Very little if any pain follows, and a superficial slough occurs leaving healthy underlying tissue.

The method of electro-coagulation is adapted to the treatment of a great variety of lesions and growths in many parts of the body, and my interest has been particularly attracted to the good results obtained in the treatment of a number of cases similar to the following:

J S — aged 80 — was operated on by the writer for removal of a papillary carcinoma at the base of the tongue about the size and thickness of an English walnut. The patient was anaesthetized with ether a mouth gag being inserted the tongue was held in position by a long suture passing through its center the cheek was divided by a lateral incision extending from the angle of the mouth to a point midway to the angle of the jaw thus exposing the growth which was removed by cutting it away with a knife electrode according to the method of electro-coagulation previously described. There was no bleeding as all vessels were immediately closed off by the electrical energy as the operation proceeded. The surface left after removal was desiccated and the line of demarcation extended well beyond the diseased tissue. The absence of bleeding makes it much easier to visualize just what is taking place in the operative field and we are thus able to perform our work with more accuracy. By this method we are better able to destroy malignant cells which may be at some distance beyond the growth thus diminishing any tendency to recurrence.

R W — aged 55 — was operated on by the writer three years ago for the removal of an extensive leucoplakia involving the cheek adjacent to the left lower jaw. This case had been previously treated by radium for one year with no result except that the disease was much aggravated the patient suffering considerable pain after each application. The radium treatment in this case was given by a physician who was skilled and experienced in its use. The diseased tissue was removed by electro-coagulation the indifferent metal electrode size 8" x 10" was placed under the shoulders and the surgical knife in an insulated handle was used as the active electrode. This was carried around the growth beyond its margin the growth being gradually lifted from its bed as it was separated by the current contact. Sloughs covered all the coagulated area which

is usual and these separated in about two weeks. During this time the patient was able to be about every day had very little discomfort, required no narcotics and had no blood loss during or after the operation. Up to the present time the area treated has held its full degree of improvement.

Malignant conditions involving the mucous membranes, as cancer of the tongue, leucoplakia, etc., usually respond very little, if at all, to treatment by x-ray or radium alone whereas when electro coagulation is used, the results are usually satisfactory. In coagulating tissue which is close to bony structures, care should be exercised not to coagulate deeply enough to destroy the periosteum as it takes considerable time, even many months in some cases, for this to heal. The entire bony structure may be destroyed when necessary. Caution should also be exercised in all these treatments to see that the indifferent electrode closely approximates the skin surface, it should be held in place by a bandage, preferably of elastic material so that if the patient moves it is not so easily dislodged. Very severe burning may result from loose or improper electrical contact, due to the arc formed in the air space between the electrode and the skin, good electrical contact, therefore, must be maintained throughout the entire operation.

Electro coagulation, if properly performed, is not accompanied by surgical shock, hemorrhage, or any loss of blood during or after the operation. In treating growths in the mouth, sometimes the coagulation will not go beyond the point of actual contact, and it is well to watch these cases during the sloughing process so as to guard against possible bleeding when the slough begins to separate. This, however, will very seldom occur. While the operation of electro-coagulation is going on, if any bleeding should take place it may be immediately controlled by applying the active electrode to its source.

While the foot switch may be used by the operator with which to turn the current on and off, it has the disadvantage of dividing the attention of the operator between his hands and his feet, also, when using the foot switch the current strength cannot be regulated, so that for the ordinary purposes of any electro coagulation operation the aid of a good assistant, stationed at the apparatus who can quickly change the control switch of the transformer so that it will deliver a greater or less amount of current, changing at once when signalled by the operator, gives the most satisfactory results.

The operator may disregard any meter reading when using electrical currents to coagulate, as his best guide is his observation of the changes taking place, or, in other words, the reaction on the destroyed tissue. The amount and character of current used, together with the time needed for its application, must depend largely on knowledge gained from previous experience.

Electro desiccation has the combined proper-

"electro surgery" which comprises the use of electricity in its many forms for the destruction or removal of body tissue

Dr Harvey Cushing, Professor of Surgery in Harvard University stresses this point in the following quotation from an extremely valuable contribution to the annals of surgery of the subject of "Meningiomas Arising from the Olfactory Groove and their Removal by the Aid of Electro-Surgery" published in *The Lancet*, of London, England, June the 25th, 1927 "Since, by the employment of a small ("active") electrode and a large ("indifferent") electrode, all the cutting effects may be confined to the tissues in the immediate vicinity of the active electrode, it constitutes a surgical tool which bids fair to replace the scalpel in certain fields of work

Naturally enough, following Pozzi's lead, this new adjunct to surgery has for obvious reasons been chiefly restricted to the removal of malignant growths and has, therefore, remained largely in the hands of specialists who are called upon to treat malignant disease in inaccessible places. Those who have seriously employed these methods in the extirpation of carcinoma about the mouth and other body orifices have written enthusiastically on the subject. But meanwhile, owing to the variety of trade names which have been introduced, no little confusion has arisen as to the meaning of fulguration, diathermy, endothermy, and so on. No less has there been confusion in regard to the various forms of current that are employed, whether unipolar or bipolar, whether for cutting, dehydration, or coagulation. For purposes of simplification, therefore, it would seem better for the time being to utilize the single term of "electro surgery" for all these varied performances "

Electro surgery has a distinctive place in the field of general as well as special surgical endeavor, as it may be used with safety and bring satisfactory results in the treatment of many conditions heretofore dangerous and inaccessible by the employment of knife surgery. Oftentimes the surgeon encounters pathological conditions which he cannot contend with successfully, due to the liability of meeting with uncontrollable hemorrhage, either because the tissue is such that it will not retain ligatures or because sloughing following his operation may extend to neighboring blood vessels and produce troublesome and even dangerous secondary bleeding.

The procedure of electro surgery, when used by the surgeon of proper training and experience, is readily controllable and entirely safe.

It is important in the treatment for destroying any lesion, particularly that of a malignant nature, that the first operation should completely remove or destroy the growth, otherwise we might stimulate new diseased cell activity.

Dr George B Eusterman and Dr A U Desjardins of the Mayo Clinic have published some interesting reports concerning the value and im-

portance of electro surgery, particularly in the removal of accessible growths. Eusterman says, "Surgical diathermy is assuming greater importance in some clinics, especially in the removal of malignant and benign tumors of the face, skull, and oro-pharynx. Electro coagulation is superior to the ordinary methods of cautery." Desjardins says, "The surgical application of diathermy is based on so concentrating the heat at one point as to produce tissue destruction. By means of suitable electrodes, such concentration and consequent destruction can be varied within fairly wide limits. Diathermy differs totally from cautery. In the former, the heat is not transmitted to the tissues by a hot instrument as is the case with the cautery. When the diathermic electrode is brought in certain relation to the tissues, the instrument remains cool, the heat being produced in the tissues themselves by their resistance to the passage of the electrical current."

The effects on body tissue when the high frequency electrical currents are used for its removal are ordinarily referred to as desiccation and coagulation, desiccation meaning the effect of drying or dehydration, this action being superficial, and coagulation meaning the deep destructive effect of the high frequency current. For the purpose of electro surgery, apparatus should be used having a constant and consistent output of current of sufficient capacity and which will produce the required quality of spark of contact energy. The spark gap which regulates the quality and indirectly the volume of the electrical discharge is a very important part of the apparatus.

Reference to the term "electro coagulation" in this paper will mean the deep destruction or coagulation of tissue by the high frequency current in direct contact by means of the active electrode connected with one terminal in conjunction with the indifferent electrode connected with the other terminal of the high frequency machine and applied to any convenient part of the body. This constitutes a bi terminal high frequency application with the damped wave characteristic. Its use is indicated for the removal of many forms of cancer which are external or accessible in cavities, also in treating deep seated growths after they are exposed by means of the ordinary surgical procedure. There is very little sloughing beyond the border of current contact and scarcely any pain or other disagreeable reaction following the treatment. Blood vessels and lymph channels are immediately sealed so that there is no blood loss and these possible entrances for the migration of disease cells are effectively shut off and closed.

In the operation for the removal of growths by electro coagulation, the following technique is the one usually employed by the writer. A large indifferent metal electrode usually 8" x 6" or larger, is applied to some part of the body where good contact can be obtained as on the

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The last meeting was held April 25th. The subject discussed was Pleural Effusions and the discussion was illustrated by many excellent X-ray films. It was a most instructive meeting.

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The new additions to the Putnam Memorial Hospital are now ready for occupancy, giving consider



ties of shrinking and sterilizing all tissue with which it comes in contact and it may accomplish this without extensive destruction. Electro-desiccation is the method of choice in the treatment of small superficial skin lesions especially those which are elevated from the surface and for removing such hypertrophic conditions of the mucous membranes as polyps, tonsils and hemorrhoids. As this is a mono-terminal application, it may be used with absolute safety, is under the entire control of the operator, is followed by a minimum amount of slough, no after pain, and the tissues are dehydrated with a minimum amount of underlying trauma. In the treatment of diseased tonsils and hemorrhoids the method of electro-desiccation is the one preferred when proper technique is employed. Many hundreds of cases of diseased tonsils during a period of eighteen years have been successfully treated by the writer according to the following technique. For convenience of application I have used an electrode devised by me especially for this work. I prefer a white spark, the so-called cold spark, instead of the red or flaming one. Crypts containing foreign substances are cleaned out before beginning treatment. The position of the patient should be upright in the chair facing the light if direct light is used, or may be treated by artificial light reflected from a head mirror. No mouth gag is necessary. Swab the tonsils, pharynx, and uvula with equal parts of adrenalin 1 to 1000, and solution of cocaine 10 per cent or any equally efficient anaesthetic. With the mouth wide open, keep the tongue out of the way with a wide glass or wooden tongue depressor, introduce the electrode so that its glass covering, which projects from one quarter to one half inch beyond its metal point, touches the tonsil, turn on previously tested current delivered from the Oudin terminal of a high frequency apparatus, then rapidly pass spark over tonsil surface until reaction occurs, as shown by a white film. The tonsillar tissue should not be penetrated by the electrode used. In nervous patients we may have to quickly withdraw the electrode, if gagging occurs, then go back and repeat. In most cases, both tonsils may be treated at one sitting. A slight irritation of the throat is felt for one or two days, in a period varying from five to seven days the throat will be found clear, and similar treatment is then given at these intervals until the maximum result is secured, usually in about six weeks, according to the amount of hypertrophy present. The length of the spark used varies in different cases and individual judgment must be exercised.

In the treatment of hemorrhoids and polyps, the application of the current is somewhat similar except that we usually bring the active electrode in direct contact with the tissue to be removed, the pile tumor or polyp having previously been clamped. Very little after care is necessary and these patients are able to resume their accustomed activities on the completion of the operation.

Electro desiccation of tissue may be produced either by the bombardment of the spark of various lengths or by the direct contact of the metallic electrode inserted into the tissue, although when direct contact is made the resulting action or destruction is more properly coagulation.

The use of the so called cutting current of high frequency for removing a growth after the entire mass has been coagulated may have a slight time saving advantage and seems to be well adapted for the purpose of rapid dissection of tissue, but unless one is particularly well skilled in its use the amount of destruction may be more than is desired, for it must be passed through the tissue very rapidly and its action is not so readily controlled as is that of the technique heretofore described.

Professor W. T. Bove of Harvard University has experimented with an unique outfit for producing the combined effects of the coagulating and cutting currents and has done some very creditable research work tending toward the solution of an accurate measurement of the electrical energy necessary to destroy the various bodily tissues. When this is accomplished, we may then be able to select the particular quality and quantity of current adapted to the condition to be treated.

Every credit for the development of the use of high frequency currents in the field of surgery in this country is due Dr. William L. Clarke of Philadelphia who was among the first to call attention to the value of these currents in surgery.

The title of this paper, "Electro Surgery," is used with the hope that it may call attention to the importance of a terminology that has a definite meaning in this specialized work, embracing as it does the use of electricity as an additional agent of value to the use of the scalpel in the field of surgery.

The best results, particularly in the treatment of inaccessible growths, will be obtained by the joint efforts of the surgeon skilled in the knowledge and use of knife surgery, and the surgeon having similar knowledge of the use and action of electricity in a surgical sense.

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able much needed room to this growing institution. The hospital, named and endowed in memory of the late Henry W Putnam of Bennington, is most pleasantly situated on a hill overlooking Bennington. An extended report on this institution will appear soon.

Many members of the profession here will take advantage of the nearness of Albany, N Y, to attend the New York State Meeting this month.

Frank E Dean, M D, who has been in Florida recuperating, has resumed his practice.

Frank J Hurley, M D, who spent one and one-half years at the New York Polyclinic, has resumed his work here.

JOHN D LANE, M D, *Secretary*

# STATE DEPARTMENT OF PUBLIC HEALTH REPORT FOR APRIL, 1928

The incidence of communicable diseases during the month of April is as follows: Chickenpox, 121, diphtheria, 4, German measles, 6, measles, 282, mumps, 193, poliomyelitis, 1 (St Albans City), scarlet fever, 40, typhoid fever, 16 (14 Rutland City), tuberculosis, 12, whooping cough, 114.

At the Laboratory of Hygiene, the following examinations have been made:

Examination for diphtheria bacilli	242
“ “ Widal reaction of typhoid fever	62
“ “ malarial parasites	0
“ “ tubercle bacilli	185
“ “ evidence of syphilis	270
“ “ gonococci in pus	97
“ of blood for contagious abortion	
“ “ in cattle	154
“ “ blood for white diarrhea of fowls	289
“ “ water, chemical and bacteriological	77
“ “ water, bacteriological	107
“ “ milk, market	13
“ “ milk, submitted for chemical only	1

Examination for milk, submitted for microscopical only	51
“ “ milk, submitted by Department of Agriculture for added water	2
“ “ foods	34
“ “ drugs	0
“ “ for the courts, autopsies	1
“ “ the courts, miscellaneous	12
Autopsies to complete death returns	1
Examinations of animal heads for evidence of rabies	0
Miscellaneous examinations	51

Reports from the Division of Venereal Diseases are as follows:

Cases of gonorrhea	42
“ “ syphilis	56
“ “ gonorrhea reporting for treatment	12
“ “ syphilis reporting for treatment	15
“ “ for intravenous treatment	5
Total treatments	180
gonorrhea outfits distributed	130
Wassermann outfits distributed	308

The Division of Aftercare for Poliomyelitis reports 20 patients seen, 1 new piece of apparatus was fitted, 13 orthopedic corrections made, 4 pieces of apparatus altered. Four patients were admitted to hospitals and six patients were discharged from hospitals. Sales from articles made under direction of the vocational teacher amounted to \$34.84.

In the Division of Maternity and Infancy, the nurse visited six towns, meeting with Farm Bureaus and Women's Clubs.

## NEW MEMBERS

Dr W W Angell, Randolph  
Dr W O Brown, Newport  
Dr T M Barber, Rutland  
Dr J T Rudden, Bellows Falls

# Case Records of the Massachusetts General Hospital

ANTE MORTEM AND POST MORTEM RECORDS AS USED IN  
WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY R C CABOT, M.D.

F M. PAINTER, A.B., ASSISTANT EDITOR

CASE 14141

## FOUR MONTHS' DYSPNEA WITHOUT EVIDENT HEART TROUBLE

MEDICAL DEPARTMENT

An Italian laborer thirty-six years old entered January 5 complaining of dyspnea of four months' duration. He spoke very poor English and often contradicted himself. The history is incomplete and unreliable.

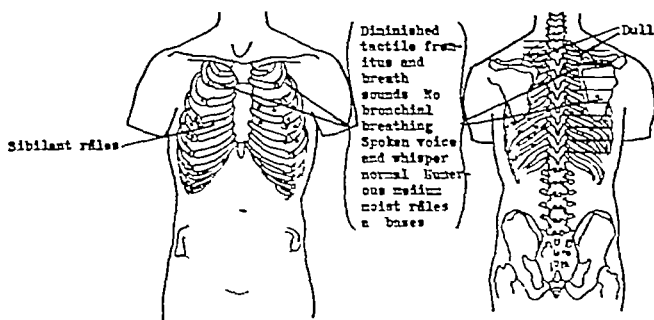
He had always had "asthma", worse in winter and aggravated by frequent winter colds. Further details were not obtainable. The asthma was apparently paroxysmal dyspnea with a good deal of coughing. Since August he had had a cough which had grown steadily worse, with ten to fifteen ounces of sputum daily, white or yellowish, occasionally foul, twice bloody. He had never been incapacitated by his asthma until four months before admission. With the onset of marked dyspnea at that time his face was swollen for several days. The dyspnea had increased though at times he felt better. Since the onset he had steadily lost strength and six pounds in weight. He had had trouble in sleeping, whether due to orthopnea was questionable. He had not worked outside his own house since October 1, partly because of lack of work. Beginning in the middle of October he had frequent headaches and attacks of dizziness coming in two week periods with remissions of a week or two. For the past month he had had none. Since November 1 he had been unable to work at all on account of dyspnea. For three months he had urinated twice at night. During the past month he had had occasional diplopia. During the past three weeks his legs and feet had been swollen two or three times. For two weeks he had been in bed on account of dyspnea, cough and edema. Recently his stools had been black. A day or two before admission he vomited.

The family history is negative.

He had questionable scarlet fever in childhood. He bled easily. He had had malaria six months or a year ago when working in a rubber factory. He noticed pyuria after inhaling gas.

Clinical examination showed a fairly well developed and nourished man very dyspneic and wheezing. Face and lips extremely cyanotic,

almost black. Face slightly puffy. Barrel chest. Expansion poor. Lungs signs as shown in the diagram. Apex impulse of the heart felt in the



fifth space 7.5 centimeters from midsternum, one centimeter inside the midclavicular line. Action regular. Rate 110. Right border of dullness 2 centimeters supracardiac dullness 5. Sounds of good quality. Pulmonic second sound accentuated. First sound split at the apex. No murmurs. Pulses and blood pressure normal. Artery walls not thickened. Brachials tortuous. An electrocardiogram showed well marked right axis deviation, normal rhythm, rate 120. Abdomen tense, distended, tympanic. Palpation unsatisfactory. Marked pitting edema of the shins and ankles. Pupils and reflexes normal. Vessels of fundi somewhat tortuous.

Amount of urine normal, specific gravity 1.020 to 1.032, a very slight trace of albumin at all of three examinations, rare to occasional leukocytes, occasional red cells and rare to many granular casts in the sediment of two specimens. Renal function 40 per cent. Blood hemoglobin 90 to 100 per cent, 12,000 to 10,000 leukocytes, 65 per cent polymorphonuclears over 6,500,000 reds at two counts, slight variation in size and shape, some achromia, platelets large and increased in numbers. Wassermann negative. Non-protein nitrogen 41. Sputum purulent, foul at one of two examinations, blood at one, no tubercle bacilli. Stool negative.

X-ray examination showed the heart shadow considerably increased in size in all diameters, suggesting an enlarged and dilated heart. The hilus shadow showed increase in size and density. Both lung fields were less than normally radiant. The outline of the diaphragm was indistinct on the left.

Temperature 100.8° to 99.5° rectal. Pulse 101 to 132. Respirations 24 to 36.

Until January 9 the condition was practically stationary. The patient was dyspneic and uncomfortable but the condition did not appear to be at all critical. January 7 the visiting physician found an enlarged liver.

January 9 the patient suddenly had extreme difficulty in breathing, marked cyanosis and feeble pulse. He was unresponsive with rolling eyes. The systolic blood pressure was a weak 60,

the diastolic not obtained. The heart action was rapid, the sounds of fair quality. Both lungs were full of moist râles and rhonchi. The breath sounds showed little air entering the lungs. Expiration was difficult. The patient was given ten grains of caffeine and two doses of ten minims of adrenalin. The systolic blood pressure rose to 95, the diastolic to 75. Because of the high red count venesection was done, but only 200 cubic centimeters was withdrawn with difficulty and with no apparent relief of the dyspnea or cyanosis. Oxygen by nasal catheter gave little relief. The lungs showed less moisture, though the breathing was no less labored and no more air entered than before. He continued unresponsive for two hours, with no change in the lung condition, though the heart action became rapid and strong, with blood pressure 95/75. He showed no further response to medication and died a respiratory death five hours and a half after the onset of the attack.

### DISCUSSION

BY RICHARD C. CABOT, M.D.

#### NOTES ON THE HISTORY

Foul sputum is not a common thing at all. If a patient really has it, it is very strong evidence of lung abscess or bronchiectasis. But it is necessary to smell it yourself, because you cannot take anybody's word for it.

If you take the history as correct in that respect, the headache is important. In the first place a laboring man does not have headaches except for very good reason. When you see all sorts of patients you feel that headache is not of much importance. But when we were working in France during the war we took headache very seriously. The kind of people we saw then, men doing work outdoors, do not often have headache. Unless it is incorrectly reported it is probably important. It certainly does not come from heart disease.

At thirty-six dizziness is of course important as it would not be in an old man.

Black stools as an item in the history are of very little importance, because people use the word "black" so inexactly. Dark colored stools mean nothing in particular unless they are the real tarry black. It is just one of the facts in the history which often turn out wrong, like statements about jaundice.

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Those are good kidneys. There is no evidence of nephritis.

The polycythemia probably is due to cyanosis. The X-ray shows no evidence of lung abscess or bronchiectasis.

A systolic blood pressure of 60 is about as low as one can get it.

His dyspnea does not improve as his blood pressure goes up. His lungs must be responsible for the dyspnea.

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As I said in the beginning, it ordinarily turns out to be true in our cases here that a man coming in for dyspnea has disease of the heart, the kidneys or both. I am convinced that he had no disease of the kidneys. He has disease of the heart, but not enough to explain his symptoms. We have to find disease in the lungs to account for the weakness of the heart and probably for most of the dyspnea he has. There is nothing to make us think of the rest of the body. Passive congestion of the liver and legs goes along with the weakness of the heart which I believe is present. He has hypertrophy and dilatation of the heart with no evidence of valve lesions.

The lungs are a puzzle. What can he have? (a) He cannot have tuberculosis in my opinion. They had many chances to look for tubercle bacilli and could not find them. He had very little fever. He is not emaciated, he is fairly well nourished. He has been sick too long for military tuberculosis. Our X-ray plate does not exclude military tuberculosis because it is not a good plate. But he has had his trouble pretty long for military tuberculosis. We can have subacute military tuberculosis lasting for weeks, but apparently this has lasted for months. I do not believe tuberculosis has anything to do with it. (b) Bronchitis? There is no doubt about it. But he must have had more than that. (c) Could he have pneumonia? There are no signs of it.

The trouble has lasted too long for that (d) *Emphysema*? Yes I am inclined to think of that in this case. Extreme cyanosis not accounted for otherwise often does go with emphysema. We need a cause for the circulatory trouble in the lungs. Emphysema does go with it. There was apparently rightsided preponderance shown in the electrocardiogram, which goes with some sort of obstruction of the lung. (e) *Chronic pneumonitis and bronchiectasis* we cannot exclude. I am inclined to think he has it. If we had a good X-ray we might be more sure of it. Foul sputum and bloody sputum go with bronchiectasis when we do not see any signs of abscess.

The best reasoning from the evidence here is that his lungs will show a chronic pneumonitis with bronchiectasis and possibly some emphysema. The heart will show hypertrophy and dilatation but nothing else. The rest of the organs will show passive congestion.

A STUDENT Do you think this could be the so called asthma dyspnea?

DR CABOT Asthma does cause dyspnea. Patients do die of asthma. Dr Rackemann has seen several cases of asthma and death in the past few years. I do not know the signs well enough to exclude asthma. But he certainly has something besides. Asthma does not cause a big heart. It does not give you foul sputum. His dyspnea has been pretty continuous, although with exacerbations. Asthma ought to leave a person with less continuous dyspnea than this. Of course we cannot investigate the question of irritants. The fact that it comes predominantly in the winter is against asthma. There is a fairly good case against asthma, but I should have considered it further than I had.

A STUDENT What was the attack January 9?

DR CABOT I think it was the same thing that he had been having. Why did it suddenly get worse? I do not know.

A STUDENT Do you think that polycythemia might have caused the headaches?

DR CABOT Possibly. It certainly is a cause of headache and some passive congestion. But I do not think I have seen headache in secondary polycythemia.

#### CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Chronic nephritis  
Bronchopneumonia  
Asthma

#### DR RICHARD C. CABOT'S DIAGNOSIS

Chronic pneumonitis  
Bronchiectasis  
Possibly some emphysema  
Hypertrophy and dilatation of the heart  
Chronic passive congestion general

#### ANATOMIC DIAGNOSES

## 2 Secondary or terminal lesions

Emphysema  
Bronchopneumonia  
Hypertrophy of right ventricle

DR TRACY B. MALLORY On opening the chest very voluminous lungs were found, almost meeting in the center over the heart. There was a slight amount of fluid in each chest, only about 200 cubic centimeters. There were old fibrous adhesions on the right. The trachea contained a moderate amount of blood tinged frothy fluid, definitely mucoid. As we went down the bronchial tract this became greater in amount, stickier and more purulent. The larger bronchi showed a reddish black discoloration of the mucosa. The smaller bronchi at the periphery of the lung were dilated diffusely throughout their extent that is a tubular rather than a saccular type of bronchiectasis. Microscopic examination shows marked congestion, hyperemia of the mucous membrane of the bronchi, infiltration with plasma cells and also fairly numerous eosinophils, many of which show a round mononuclear nucleus. These are of rather common occurrence in bronchiectasis and asthma. The muscular layer did not show any definite hypertrophy as it ought to do in typical asthma. I should be inclined to class the case as one of chronic bronchitis with possibly a symptomatic asthma. The upper lobes of the lungs showed very marked and definite emphysema. Microscopic examination showed very early foci of bronchopneumonia.

As was predicted the right heart was much hypertrophied. The wall of the left ventricle measured 8 millimeters in thickness, as against the normal of about 3. Virtually about half the total weight of the heart as nearly as I could estimate was supplied by the right ventricle.

The other organs showed a considerable degree of acute but very little chronic congestion. The text books on pathology always tell one that emphysema does not give chronic passive congestion of the liver. I have no explanation of that but I have seen several examples where it was true. In this case there was a very slight degree of chronic congestion although a relatively marked acute congestion. The only possible explanation that I have is that when there is heart failure entirely on the right side of the heart it is perhaps too sudden and rapid to give the type of change in the liver that one gets in a mitral case where the condition lasts over months, sometimes years. Have you any ideas about that, Dr Cabot?

DR CABOT Not any.

DR MALLORY I think the fact is pretty well established. The German writers are particularly emphatic about it. The cases that I saw in Germany and the few cases I have seen here most of them have fitted very well.

DR CABOT Dr Lord used to say of bronchi-

## 1 Primary fatal lesion

Bronchiectasis

the diastolic not obtained. The heart action was rapid, the sounds of fair quality. Both lungs were full of moist râles and rhonchi. The breath sounds showed little air entering the lungs. Expiration was difficult. The patient was given ten grains of caffeine and two doses of ten minims of adrenalin. The systolic blood pressure rose to 95, the diastolic to 75. Because of the high red count venesection was done, but only 200 cubic centimeters was withdrawn with difficulty and with no apparent relief of the dyspnea or cyanosis. Oxygen by nasal catheter gave little relief. The lungs showed less moisture, though the breathing was no less labored and no more air entered than before. He continued unresponsive for two hours, with no change in the lung condition, though the heart action became rapid and strong, with blood pressure 95/75. He showed no further response to medication and died a respiratory death five hours and a half after the onset of the attack.

### DISCUSSION

BY RICHARD C. CABOT, M.D.

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A radiologist and a surgical consultant agreed in thinking that two processes were probably present

December 9 biopsy was done Under gas-ether a muscle splitting incision was made about the center of the mass and first the Mixter punch was introduced without getting what looked like

out any suggestion of anything other than inflammation A pathological report of chronic inflammation was returned

The patient felt fairly well after the operation One-tenth miligram of tuberculin was given intradermally with no reaction The incision became slightly septic and cloudy serous fluid

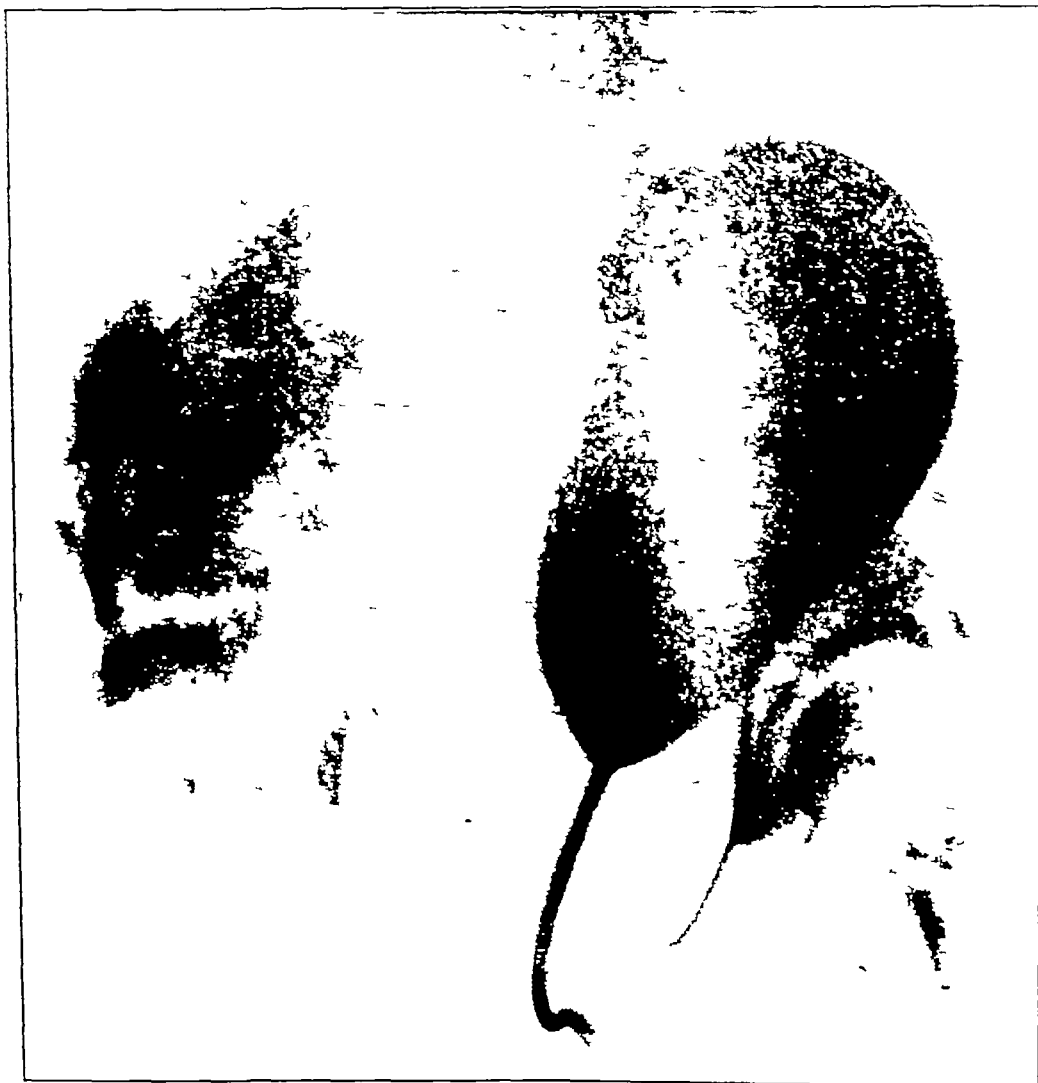


PLATE I. Taken at admission. Shows an extensive destructive process involving the right ilium, the hip joint, the sacro-iliac joint and the head of the femur. The right femur is smaller and less radiant than the left. The bladder is considerably larger than normal and is displaced well to the left of the median line.

satisfactory tissue. Then a section of the superficial part of the tumor was cut out. This allowed the finger to enter the tumor mass in various directions, apparently into necrotic inflammatory material. There was no free pus. A culture was taken from the center of the mass. Tissue was then removed from the depth of the wound. This also seemed like inflammatory material. The finger penetrated through to the iliac fossa and downward into the pelvis with-

drained from two small sinuses. Under drainage the suprapubic mass seemed to grow smaller and less firm. By December 21 the temperature was flat. December 28 the old wound was reopened under gas and a cigarette wick and Dakin's tubes were inserted. By January 5 the drainage and Dakin's tubes were out. January 7 the sinuses were open and hot applications started. The mass seemed to be increasing rather than decreasing in size. Alpine lamp treatment was be-



ectasis that it always was accompanied by a certain amount of chronic pneumonitis. Is that your experience?

DR MALLORY: Not always. It usually is. I had a case yesterday in which Dr. Lord was forced to admit that it was not.

DR CABOT: How was it in the case that we have been discussing?

DR MALLORY: There was a moderate amount, fairly close to the bronchi, but a definite infiltration of the lung parenchyma for a few millimeters on each side of the bronchi.

DR CABOT: How much did the heart weigh?

DR MALLORY: 375 grams.

DR CABOT: Was there anything to show why he had this attack at the end?

DR MALLORY: Only the relatively large amount of secretion in the smaller bronchi. There was apparently more than he was able to cough up.

DR CABOT: When a patient becomes so weak that he cannot cough he gets to a point where he drowns in his own secretions.

#### CASE 14142

#### OBSCUR E BONE INFECTION ABOUT HIP JOINT

#### ORTHOPEDIC DEPARTMENT

An American schoolboy thirteen years old was referred from one of the State tuberculosis sanatoria December 3 complaining of a suprapubic mass of two months' duration.

A report from the sanatorium states that sixteen months before admission he fractured the right hip and pelvis. He wore a spica for seven months. At the end of this time union had apparently occurred. Two months later he was allowed to walk with crutches. The right leg had remained very weak. A tuberculin test was negative. He was however sent to the sanatorium because he was believed to have tuberculosis of the hip. Examination at the sanatorium showed shortening of the right leg. All motions in the leg were limited. The thigh was abducted 45°. X-ray showed an old destructive process of the right hip joint involving the ilium and the neck and head of the femur. There was considerable bone production. The patient was placed in a traction apparatus and got along comfortably for six weeks. Two months before admission he complained of severe pain in his right lower quadrant present during the day and disappearing during the evening. He said he had had similar but milder pains before. On examination a median suprapubic mass was found extending almost to the umbilicus. He continued to be comfortable, lost no weight, and maintained a hemoglobin of 65.

His family history is unimportant.

Clinical examination showed a fairly well developed, thin, almost emaciated boy. Skin un-

usually brown except for a triangular white area over the lower abdomen, the genitalia, the perineum and the sacrum posteriorly. Blood pressure 95/70. Considerable muscle atrophy of both thighs and lower legs. Right hip firmly ankylosed, active and passive motion impossible. Anterior superior spine of right ilium was not so prominent as was the left. Over the anterior aspect of the right hip and in the right groin was a fullness not present on the left. In the lower midabdomen was a visible mass, smooth, very hard, not tender, rising as high as the umbilicus and extending from the lateral border of the left rectus to the right ilium, with which it seemed to be continuous. It was firmly fixed to the os pubis. On the right it rose as high as the iliac crest and was continuous with the fullness noticed over the right hip. Posteriorly there was fullness over the dorsum of the right ilium which was not felt over the corresponding bone on the left side. By rectum a mass could be felt firmly attached to the right side of the pelvis, of which it seemed to be a part. The finger in the rectum could not be extended beyond the midline toward the right side because of this obstructing mass. In no place was there any tenderness or other suggestion of inflammation. The rest of the examination was negative.

Before operation normal amount of urine when recorded, specific gravity 1.008 to 1.018, sediment, occasional leukocytes, blood, 9,400 leukocytes, 70 per cent polymorphonuclears, hemoglobin 70 per cent, reds 4,256,000, Wassermann negative.

An X-ray film of the chest showed no abnormality. At examination with a barium enema the colon filled normally to and including the cecum. No filling defects were seen. Mobility of the colon could not be obtained entirely satisfactorily because of spasm of the abdomen, but the cecum appeared to be freely movable. There was no definite relation to the mass in the lower abdomen and the colon. A plate of the pelvis showed an extensive destructive process involving the ilium, the hip joint, the sacro iliac joint and the head of the femur. The femur on this side was smaller and less radiant than that on the opposite side. A cystogram showed the outline of the bladder well. It was considerably larger than normal and was displaced well to the left of the median line. (See Plate I). "In view of the clinical findings and the appearance of the ilium above the hip joint the picture might best be explained as tumor, probably sarcoma of the ilium, plus a disorder of the hip which might be old tuberculosis or the destruction incident to a former complete separation of the femoral epiphysis."

Before operation temperature 98° to 100.3°, with daily afternoon rise, pulse 80 to 111, respirations normal.

Dr. Allison in consultation suggested biopsy and tissue examination.

be seen and palpated anteriorly. He was sent to the hospital with a diagnosis of sarcoma. The mass was located slightly to the right of midline and filled up the right lower quadrant and region mesial to the anterior-superior spine of the ilium. X-ray examination showed the bladder displaced definitely to the left side beyond the midline.

The above outline of the history gives clearly the physical findings. There was evident destruction of the right hip on which a diagnosis of tuberculosis had been made several years previous to his entrance at the hospital and for which lesion he had been treated by heliotherapy so that his skin was deep brown in color.

#### DIFFERENTIAL DIAGNOSIS

It seemed to the roentgenologist that the tumor mass was probably osteogenic sarcoma superimposed on an old tuberculous lesion of the hip. Several members of the surgical and orthopedic services respectively believed the whole process to be one of tuberculosis in which an extraordinary amount of proliferation of bone tissue had taken place. Biopsy performed at one time revealed only chronic inflammatory tissue. Cultures taken at this time were negative, showing no growth and nothing on smear. X-ray examination of the chest revealed no evidence of metastases in the lungs.

After numerous examinations, biopsy, and discussions, the diagnosis on the tumor mass lay between a chronic tuberculous mass, osteogenic sarcoma of ilium, and osteomyelitis involving the ilium and femur.

An exploratory operation was performed, entering the pelvis from the side of the ilium just below the anterior-superior spine. On removing

the portion of the ilium just above the acetabulum a large abscess cavity was opened, which on further inspection was found to communicate with the small sinus draining from the old biopsy wound in the abdominal wall. This tumor filled the entire pelvis mesial to the acetabulum and was a direct extension of a process involving the hip joint. Examination of tissue removed at this time showed no evidence of tuberculosis whatsoever in numerous sections. A guinea pig test was negative. Final diagnosis: osteomyelitis of upper end of femur and ilium.

This instance of bone disease is interesting from several points of view. In the first place, the patient was treated for tuberculosis of the hip when the disease was apparently not tuberculosis. In the second place, the tumor mass was thought to be osteogenic sarcoma, which it proved not to be. Finally, the diagnosis of osteomyelitis involving the upper end of the femur and ilium seems definitely proved, but the clinical history is not that of the ordinary case of pyogenic osteomyelitis. It may be assumed that the bacterial agency was of such low-grade virulence that the ordinary picture of acute illness was at no time present.

#### X-RAY INTERPRETATION DECEMBER 6

##### DIAGNOSIS

Osteomyelitis of upper end of femur and ilium

In view of the clinical findings and the appearance of the ilium above the hip joint the picture might best be explained as tumor, probably sarcoma of the ilium, plus a disorder of the hip which might be old tuberculosis or the destruction incident to former complete separation of the femoral symphysis.

gun January 10 and continued until January 27, six treatments being given. January 13 the mass was found to have definitely increased in size in the past four days. Dakin's irrigations were given daily.

X-ray of the bones of the foot and ankle showed some atrophy. In the lower end of the tibia just above the epiphyseal line there was a

of the right scrotum. The right inguinal glands were enlarged. The spine and the other joints were negative.

January 25 operation was done. The patient did well after it. There was moderate drainage from the wound. The abdominal mass seemed to decrease in size. An X-ray film taken February 3 with sodium iodide solution injected into the



PLATE II Taken February 6 at discharge. Lipiodol has been injected into the drainage sinus filling a moderate sized abdominal abscess cavity.

faint circular ring like shadow of slightly increased density both in the anteroposterior and the lateral views. The pelvic mass continued in the same condition.

The patient was transferred to the Orthopedic service. On examination the right hip presented a permanent flexion deformity of  $10^\circ$  as before, but was partially, not completely ankylosed, as it could be further flexed  $20^\circ$ . Rotation was nil. There was no power of abduction or adduction. There was moderate swelling of the right thigh and calf, half an inch to an inch, and some edema

bladder showed the displacement of the bladder somewhat less than at the last observation. Lipiodol was injected into the drainage sinus. X-ray showed the lipiodol filling a moderate sized abscess cavity. (See Plate II.) February 7 the patient was discharged back to the sanatorium.

#### DISCUSSION

BY NATHANIEL ALLISON, M.D.

When first examined in the hospital this patient presented a large pelvic tumor which could

vided for the Massachusetts Medical Society and that the Corporation will cooperate to that end  
H BINNEY *Secretary*

In a later issue of the JOURNAL a more full report of the meeting will be given

## Contributions for the Home for The Massachusetts Medical Society

CONTRIBUTIONS for the proposed headquarters of the Massachusetts Medical Society have been very generous in some districts. Other districts have been slow to respond. This tardy response in some sections appears to have been due chiefly to misgivings as to any breach between the Society and the Boston Medical Library.

All grounds for this fear have been removed. Fellows of the Society at first lukewarm are now enthusiastically in favor of raising money for adequate quarters for both the Society and the Library.

The present need is to raise \$125,000 for securing and maintaining headquarters for the Society. If this is secured the Library will be free to go ahead with its plans for betterment, relieved of the need of soliciting money for rooms not needed strictly for Library purposes. The Society meantime can at once secure adequate quarters for the period, necessarily several years before the Library can expect to have completed its building program. It is the earnest wish of those in charge that each Fellow make his contribution to the Treasurer of the Society, Dr. Arthur K. Stone of Framingham Centre, before the Annual Meeting.

## THIS WEEK'S ISSUE

CONTAINS articles by the following named authors

DOWLING JOHN J. M.D. Harvard 1894. Superintendent Boston City Hospital. His subject is "Plans and Progress of the Boston City Hospital." Page 723. Address Boston City Hospital.

ROBEY WILLIAM H. A.B. M.D. Harvard 1895. Assistant Professor of Medicine Harvard University. Visiting Physician Boston City Hospital. Consulting Physician Milton Hospital. President New England Heart Association, Vice-President, American Heart Association. His subject is "The Effects of Tonsillectomy on the Attack of Acute Rheumatic Fever." Page 724. Address 202 Commonwealth Avenue, Boston.

BINNEY HORACE A.B. M.D. Harvard 1901. F.A.C.S. Surgeon-in-Chief, Boston City Hospital, Assistant Professor of Surgery Tufts Medical School. His subject is "Suppurative Diseases of the Lungs." Page 725. Address 403 Beacon Street Boston.

WEARN JOSEPH T. B.S. M.D. Harvard, 1917. Assistant Professor of Medicine, Harvard Medical School. Associate Director of the Thorndike Memorial Research Laboratory. His subject is "The Thebesian Vessels of the Heart and Their Relation to Angina Pectoris and Coronary Thrombosis." Page 726. Address Boston City Hospital.

MASON NATHANIEL R. A.B. M.D. Harvard 1901. F.A.C.S. Chief of Staff Gynecological and Obstetrical Service, Boston City Hospital, Instructor in Obstetrics and Gynecology, Harvard Medical School. His subject is "Case of Malignant Disease of the Vagina." Page 727. Address 483 Beacon Street, Boston.

YOUNG EDWARD L. JR. M.D. Harvard 1909. F.A.C.S. Assistant Visiting Surgeon Massachusetts General Hospital. His subject is "The End Results of Chronic Cholecystitis." Page 729. Address 279 Clarendon Street, Boston.

MARGESON, REGINALD D. M.D. Tufts, 1915. F.A.C.S. Junior Visiting Surgeon for Gynecology and Obstetrics Boston City Hospital. Assistant in Anatomy, Harvard Medical School. Assistant in Gynecology Harvard Medical School. His subject is "Toxemia in Pregnancy." Page 735. Address 520 Commonwealth Avenue, Boston.

ROGERS PHILIP M. M.D. For data see footnote on Page 740. His subject is "A Study of the Blood Monocytes in Children With Tuberculosis." Page 740. Address Seattle City Hospital, Seattle, Washington.

DAVIS DAVID B.S. M.D. Cornell, 1925. Intern, Boston City Hospital November, 1925-July 1927. First Medical Service, In Charge of Cardiological Clinic Boston Dispensary. His subject is "The Determination of the Blood Sedimentation Time with Capillary Blood." Page 750. Address 485 Commonwealth Avenue Boston.

WESSELHOEFT, CONRAD M.D. Harvard, 1911. Physician Haynes Memorial Hospital, Lecturer in Theory and Practice Boston University School of Medicine. Address 366 Commonwealth Avenue, Boston. Associated with him is

GORDON FAITH F. S.B. M.D. Boston University 1923. Assistant to the Medical Director at Smith College. Address 65 New South Street, Northampton Mass. Their subject is "Report of Convalescent Measles Serum Administration in Cases Exposed to Measles During the Course of Scarlet Fever and Diphtheria." Page 752.

DALTON CHARLES F. M.D. University of Vermont, 1903. Secretary and Executive Officer Vermont Department of Public Health since 1912, Professor of Hygiene and Preventive Medicine University of Vermont, College of Medicine, Formerly President, Conference of

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## RESPIRATORY DISEASE AMONG INDUSTRIAL WORKERS

THE United States Public Health Service has recently assisted in the analysis of the record of an electric light and power company in regard to diseases which cause time lost from work, and has published the result of its tabulations. More than one half of the absences on account of sickness were found to be due to diseases of the respiratory tract—the ordinary cold, sore throat, tonsillitis, bronchitis, influenza or grippe and pneumonia. The record includes all absences lasting a day or longer over a ten-year period. No other disease group approached this one in importance.

Various employee benefit associations in the northern and eastern part of the country have records which duplicate these, respiratory diseases having caused 47 per cent of all the cases of illness for which sick benefits were paid, from 1921-1926, by 35 different associations having a combined membership of nearly 100,000 persons. The electric company first mentioned showed that the average loss of time on account

of sickness was approximately six days a year per individual, of which three days were due to respiratory disease. According to the record of the company, also, the common cold caused 70 per cent of the absences due to respiratory diseases, occasioning the disability of 4 out of 10 men annually, and 7 out of 10 women.

Next in importance to the common cold came influenza or grippe, and the third group, as far as time lost was concerned, was that comprised of diseases of the pharynx and tonsils. The same experience was encountered by the sick benefit associations.

The incidence of respiratory diseases, as might be expected, varied with the seasons, July being the healthiest month in this respect, and February marking the peak of incidence. The rate of respiratory disease was also found to vary widely in different types of industrial establishments, and in different industrial groups, communities and cities. A careful study as to the causes of these differences is needed, and several studies in this field are now being undertaken by the Service. One recently begun, is a study of the specific respiratory disease, lobar pneumonia.

It is a matter of great importance and a cause for congratulation that industrial organizations, research foundations, and the Public Health Service are taking up studies of these infections. Diseases which are responsible for practically half of the time lost from industry and which are in theory at least, preventable, deserve the careful consideration of medical science.

## The Boston Medical Library and The Massachusetts Medical Society

A SPECIAL meeting of the Corporation of the Boston Medical Library was held at the Library on May 21st, called at the request of the Executive Committee to act upon the following vote and recommendation of the Executive Committee passed on May 7th.

VOTED That the Executive Committee recommended to the Corporation of the Boston Medical Library that the Library start at an early date an active campaign for funds for its needs.

At this meeting of the members of the Library the following two votes were passed.

VOTED That the recommendation of the Executive Committee be adopted and that authority be granted to this committee to institute a campaign for funds to meet the urgent need of the Library for increased space, and to provide quarters under one roof for the various medical and allied interests, approved by them, in Massachusetts.

VOTED That the sentiment of this meeting of the Corporation is that a home should be pro-

an assistant who injects the previously determined number of syringefuls of water. The stem is then tied with umbilical tape, and retied folded, until careful inspection gives assurance of no leaking. A three pound pull is provided by weights at the foot of the bed. It should be noted that a three pound weight so arranged does not necessarily exert a three pound pull. If the bag is to be placed within the amniotic sac the membranes are ruptured previous to its insertion.

When the bag itself, above the stem appears at the introitus, dilatation of the os is nearly complete, further progress is hastened by traction with each contraction, grasping the bag itself just above the stem, the patient having obstetric anesthesia. Securing, with the bag, complete dilatation of the perineum as well as the cervix, materially aids subsequent procedure.

Questions of a similar nature to the foregoing will be discussed in the JOURNAL each week. They may be addressed to the Clerk of the Committee, in care of the JOURNAL and will be answered by members of the Committee of the Section of Obstetrics and Gynecology.

## BOSTON MEDICAL LIBRARY

### SURGICAL PATHOLOGY

THE dissociation of the study of clinical medicine and pathology has been one of the tendencies of recent years. Pathology in the schools has been taught as a second-year subject as a rule and only sporadically in any school, and not even in that way in many has the knowledge there acquired been carried over into the clinical years in any purposeful fashion. If this is true for the internist and general practitioner it is infinitely more true for the surgeon whose opportunities for studying gross pathology in the living are far more extensive than can possibly be the case with the medical practitioner at best unless he avail himself far more generally than he does of post mortem material. A considerable portion of any process which we term pathological when viewed from the standpoint of the microscope, is reparative and represents the efforts of the organism to overcome a hostile agency.

The surgeon can form no conception of this from anything he may see at operation unless he trains himself by the study of every gross specimen he sees and pursues this study even farther with the microscope. One has some times had to question why surgical situations which measured by prevailing standards should be dealt with by operative measures appear to recover spontaneously. Is it due to mistaken diagnosis or may it not be due to the fact that refusal of the patient to submit to surgery gives time for the reparative forces of the body to bring about a cure? If the latter should really be the answer, would not a closer study of the

pathology when practiced upon a large number of such cases give information which might be clinically useful, thereby saving certain patients from the risks and annoyances of surgery?

The remarkable restorations which are occasionally observed after extensive destruction of bone, even involving considerable correction of resultant deformity strengthen one's belief that we have yet much to learn in respect to nature's recuperative powers and the laws which govern them.

A case of constipation comes to the doctor. He is familiar with a number of things which he knows will open the bowel. How often he prescribes the first one that he recalls without any serious consideration of that patient's particular needs! A surgical situation presents itself, the knife may cure it and so that kind of treatment is prescribed after such interrogation and examination has been undertaken as tends to establish the diagnosis but not necessarily give much information as to where that particular case should be classed on the basis of the natural history of that disease.

A great many conditions in healthy young children, as for example pronated feet, mild degrees of bow legs or knock knees and many others are brought to the physician by anxious parents, that merely represent a phase common to the development of the child. These conditions correct themselves and require no treatment. The ruthless removal of structures, that it is fair to assume would never have been given us had not their presence held the promise of greater benefit than menace is a matter that deserves more thoughtful consideration than in all probability it commonly receives. A more serious study of the surgical pathology of these structures might lead to a more intelligent application of surgery for the treatment of the lesions to which they are subject.

There is grave danger in too great a refinement of operative technique unless there is developed along with it an equally keen appreciation of the significance of pathological changes with their concomitant reparative processes. So little risk attends most procedures in the hands of the technically skillful operator that it is not difficult to obtain permission for surgery, but it is not by such practice that the knowledge of surgical disease is to be advanced. Hippocrates has somewhere said in effect that the physician must learn from the past if he is to do himself and his patients the greatest good. Much has been written on this subject, some of which will be displayed in Holmes Hall the week of May 28th.

State and Provincial Health Authorities of North America Vice-President, Vermont State Medical Society His subject is "Poliomyelitis Work in Vermont" Page 755 Address Department of Public Health, Burlington, Vermont

McFEE, WILLIAM D. M.D. University of Vermont, 1897 Chief of Staff, Gale Hospital, Haverhill, Director of Physio-Therapy, Past President and Present Trustee, American Electrotherapeutic Association, Past Director of Physiotherapy Department of Walter Reed Hospital, Major in Medical Reserve Corps, U. S. Army His subject is "Electro-Surgery" Page 761 Address 53 White Street, Haverhill, Mass

### The Massachusetts Medical Society

#### SECTION OF OBSTETRICS AND GYNECOLOGY

Foster S. Kellogg, M.D. Frederick L. Good, M.D.  
Chairman Secretary  
Frederick J. Lynch, M.D., Clerk

#### What Are the Uses of the Obstetric Bag?

The treatment of certain types of first stage delay, the control of hemorrhage during labor, and the induction of labor represent the indications for the use of the bag.

When first stage delay is entirely a matter of slow dilatation, due perhaps to an absence of forewaters, to a physiologically or pathologically "rigid" cervix, or to a primary inertia, the bag becomes a valuable treatment measure. A reasonably prompt completion of dilatation can be anticipated, provided always that the definite contraindication of a "neglected" labor is recognized. In the case with imminent, or definitely established irregular contractions (contraction rings) the bag *should not be used*. If a bag is to be used in a long drawn out first stage case, especially a "dry" labor, it must be inserted in sufficient time to allow for full dilatation before the anticipated tonic uterus develops.

In the partial previas which begin to bleed after some dilatation has occurred, the bag, placed within the lower segment so as to compress the placenta, will control bleeding until dilatation is completed, with extraction then relatively easy and safe, a high percentage of favorable results can be anticipated in this type of case.

In the complete previas when section is not available, the bag represents an emergency treatment safer than an accouchement forcé in most cases. The partial separation of a normally implanted placenta should be sharply differentiated from the previas as far as bag treatment is concerned. The bag may be used in such a case, (with slight bleeding) to secure a reasonable degree of dilatation before extraction is attempted, but the conversion of

an open into a concealed hemorrhage may engender a false sense of security.

When induction of labor is indicated, four methods are available for its accomplishment, one of these is the bag. The "drug" method (castor oil and quinin) is unreliable and usually efficacious only if spontaneous labor is imminent. Artificial rupture of the membranes is efficacious, within forty-eight hours ordinarily, but carrying with it such difficulties as may be anticipated in certain cases from a "dry" labor. The large catheter or rectal tube with cervical pack is not always positive in action but the labor so induced usually follows a normal course, other things being equal. With the bag, induction is usually prompt, a "stormy" first stage is apt to result, a definite disadvantage in primiparous patients. While in some cases a bag may remain in situ for forty-eight hours with no evidences of beginning labor, generally speaking it is the most dependable means at our disposal for quickly inducing labor. When the element of time is important it is the method of choice. It may with advantage be combined with the drug method.

The successful use of a bag in any case depends on the recognition of certain principles most important, the size of a bag employed in a given case should always be as large as the baby's head. The bag should not be removed ordinarily, before its spontaneous delivery, its passage over the perineum being hastened by anesthesia and traction. In the cases of spontaneous delivery of the bag, birth usually follows rapidly, but if such is not the case one should not wait longer than fifteen minutes before the extraction.

With partial dilatation already present a bag may be introduced without anesthesia, but unless the patient is exceptionally self-controlled, anesthesia (gas oxygen) aids materially, especially in the maintenance of asepsis. The instillation in the vagina of two drachms of a four per cent mercurochrome solution previous to insertion is advised.

The perineum is retracted with a weighted speculum, the cervix grasped and steadied, with vulsellum forceps. The capacity of the bag to be used is then measured by noting carefully the number of syringefuls of sterile water it contains when firmly distended. If the os does not admit a finger easily it is dilated to that size with a uterine dilator. The bag is then folded over once (not rolled) and grasped with a long heavy curved broad ligament clamp and inserted into the lower segment until only the stem is visible outside the cervix. Its introduction through a tight cervix is greatly facilitated by free lubrication with sterile liquid soap. It should be inserted to one side of the presenting part leaving the displacement of the latter to occur as the bag is filled. When in place, the clamp is removed, a finger in the cervical canal preventing dislodgement of the bag before its distention is complete, this latter is secured by

an assistant who injects the previously determined number of syringefuls of water. The stem is then tied with umbilical tape, and retied folded until careful inspection gives assurance of no leaking. A three pound pull is provided by weights at the foot of the bed. It should be noted that a three pound weight so arranged does not necessarily exert a three pound pull. If the bag is to be placed within the amniotic sac the membranes are ruptured previous to its insertion.

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## MISCELLANY

REPORT OF MASSACHUSETTS BOARD  
OF REGISTRATION IN MEDICINEAPPLICANTS REGISTERED—EXAMINATION OF MARCH,  
1928

Abbott, Alden Quimby, 85 Otis Street, Cambridge, Mass  
 Andrews, Katherine Sarah, 110 South 21st Street, Philadelphia, Pa  
 Bloom, Henry Rostler, State Hospital, Middletown, N Y  
 Bourcier, Albert Ubald, Northampton State Hospital, Northampton, Mass  
 Bresnick, Nathan, 237 Chambers Street, Boston, Mass  
 Ching, Sarah Mu Jin, Worcester State Hospital, Worcester, Mass  
 Clapp, Roland Davis 15 Monument Street, New Bedford, Mass  
 Clifford, Stewart Hilton, 274 Brookline Avenue, S 15, Boston, Mass  
 Cohen, Benjamin Myron, 1493 Cambridge Street, Cambridge Mass  
 Corrigan, Sylvester Edward, St. Luke's Hospital, New Bedford, Mass  
 Cox, George Everett, 660 Maple Street, Manchester, N H  
 Cragg Grace Teresa, Lock Box A, Harding, Mass  
 DeAsis Cesareo, Worcester State Hospital, Worcester Mass  
 Driscoll, Daniel Timothy, 465 Highland Avenue, Malden, Mass  
 Dumouchel, Antoine, Rutland State Sanatorium, Rutland, Mass  
 Farrall Byron Huntley, Box 412 Groton, Mass  
 Fleming, Francis James, Box 8, Waverley, Mass  
 Forget, Ulysses, 72 Child Street, Warren, R. I.  
 Gerrish Barney, U S Marine Hospital, Chelsea, Mass  
 Grandfield, Robert Francis, 392 Marlborough Street, Boston, Mass  
 Grinold, John Joseph, 59 West Main Street, Meriden, Conn  
 Haubrich, Bernard Page, Springfield Hospital, Springfield, Mass  
 Hoyt, Lyman Howard, Peter Bent Brigham Hospital, Boston, Mass  
 Johnson, Harry Taylor, 64 Cherry Street, Waltham, Mass  
 Koulack, Isidore Lynn Hospital, Lynn Mass  
 McGovern, Thomas James, Norfolk County Hospital, South Braintree, Mass  
 Moss, William Lorenzo, Harvard Medical School, Boston, Mass  
 Pierce, Everett Lyman, 179 Bay Street, Springfield, Mass  
 Reid, Thomas Francis 108 Middlesex Street, North Andover, Mass  
 Ronka, Ensio Karl Frederick, 82 East Concord Street, Boston, Mass  
 Ross, James Gordon, 41 Hayman Court Apts, London, Ontario  
 Sherman, Sol, 397 Pearl Street, New York City, N Y  
 Sullivan, Daniel Francis, Jr 186 Fern Street, Hartford, Conn  
 Tauro, Antonio Luigi, 11 Bedford Street, Lynn, Mass.  
 Tauro, Emily Cooper, 11 Bedford Street, Lynn, Mass

Walter, George 58 Anderson Street, Boston, Mass  
 Wason, Isabel Mary, 147 Cottage Street, New Bedford, Mass  
 Whitehorn, John Clare, McLean Hospital, Waverley, Mass  
 Wilder, Theodore Stanley, 300 Longwood Avenue, Boston, Mass

## ENDORSEMENT OF NATIONAL BOARD REGISTRATION

Burrage, Walter Swan, 182 Walnut Street, Brookline, Mass  
 Collins, Wylie Louis, Boston Lying in Hospital, Boston, Mass  
 Doolittle, Lawrence Howard, Massachusetts Homoeopathic Hospital, Boston, Mass  
 Ellis Laurence Brewster 1175 Centre Street, Newton Centre Mass  
 Gallup, Henry Ezra, 300 Longwood Avenue, Boston, Mass  
 Gildea Edwin Francis Boston City Hospital Boston Mass  
 Kendrick, Doris 177 Bedford Street, Lexington, Massachusetts  
 Weiss, Peter Francis, 36 Perkins Street, Jamaica Plain, Mass

## CLASSIFICATION OF GRADUATES OF MEDICAL SCHOOLS

Name of School	Registered	Date Grad	Rejected	Date Grad
Middlesex _____	1	1923	1	1922
	1	1926	2	1923
			2	1925
			1	1926
Kansas City University of Physicians and Surgeons _____			1	1926
			2	1927
St. Louis College of Physicians and Surgeons _____			1	1923
Massachusetts College of Osteopathy _____	1	1922	1	1923
	1	1926	3	1925
	1	1927	2	1925
			5	1927
Kirksville College of Osteopathy and Surgery _____	1	1926	1	1921
			1	1925
			1	1926
			1	1927
			1	1928
Des Moines Still College of Osteopathy _____			1	1927
College of Physicians and Surgeons, Boston _____	1	1926	2	1927
Chicago Medical College _____			1	1925
Philadelphia College of Osteopathy _____	1	1927	1	1927
University of Montreal _____	3	1927	1	1921
			2	1922
			1	1925
			1	1927
University of Coimbra _____			1	1927
Chicago College of Osteopathy _____	1	1927		
Tufts _____	4	1927		
Boston University _____	1	1925	1	1927
	1	1926		
	5	1927		

University of Warsaw (Detected cribbing and dismissed from the examinations).....	1 1926
Royal University of Naples.....	1 1923
University of Maryland.....	1 1910
McGill University.....	1 1927
University of Toronto.....	1 1926
University of Vermont.....	1 1924
Woman's Medical School Penn sylvania.....	1 1921
Johns Hopkins.....	1 1905
	1 1917
University of Pennsylvania.....	1 1924
Harvard Medical.....	1 1921
	1 1925
	1 1928
University of Western Ontario.....	1 1917
Western Reserve.....	1 1924
St. Louis University.....	1 1924
Dalhousie University.....	1 1922
State University Iowa.....	1 1925

#### ENDORSEMENT OF NATIONAL BOARD REGISTRATION

Harvard Medical.....	1 1924
	1 1925
	4 1926
University of Michigan.....	1 1926
Boston University School of Medicine.....	1 1926

### MASSACHUSETTS LEGISLATIVE NOTES

House 1300—provides for the disposal of sewage of certain property of the Department of Mental Diseases in Waltham Lexington and Belmont, and for the disposal of sewage of certain areas in Waltham Lexington and Watertown which may be combined therewith

House 1304—is designed to provide for the care and treatment of children predisposed or susceptible to tuberculosis This is an amendment to Chapter 111 of the General Laws The text of the bill reads

The County commissioners of any County having a tuberculosis hospital established under sections seventy-eight to ninety inclusive may provide with the approval of the department, proper and necessary buildings and other equipment for a preventorium for the treatment of children predisposed or susceptible to tuberculosis

House 1310—is an act providing for temporary care and treatment of adult residents of certain counties suffering from pulmonary tuberculosis The especial feature of this bill is that the Department of Public Health may arrange for the admission to and for the care and treatment of persons suffering from pulmonary tuberculosis who are residents of any of the cities or towns composing the territory of the Worcester County or Middlesex County Tuberculosis Hospital District or of the tuberculosis hospital district comprising Chelsea Revere and Winthrop in approved institutions

House 1314—is an act authorizing the County of Middlesex to raise and expend money for the purpose of providing a tuberculosis hospital for the Middlesex County Tuberculosis Hospital District

House 1315—is an act authorizing the County of Worcester to raise and expend money for the purpose of providing a tuberculosis hospital for the Worcester County Tuberculosis Hospital District

### RECENT DEATHS

BRIDGWOOD and PETERSON—The JOURNAL is pained to record the death by drowning of two of its valued Fellows from Brockton in Moosehead Lake, Maine, Sunday May 13 1928 Dr David Bridgwood, a young eye ear nose and throat specialist a member of the staff of the Brockton Hospital and Dr Arthur Fredolf Peterson a general practitioner who had been city physician in 1923 went to Moosehead Lake on a fishing expedition with seven other prominent citizens of Brockton The motorboat in which they were traveling ran into a sunken log the boat was upset, and all but one of its occupants were drowned

Dr Bridgwood who was born in 1894 was a graduate of the Tufts College Medical School in 1917 He was a member of the Commercial Club Brockton Elks and Knights of Pythias and was a thirty second degree Mason He was unmarried

Dr Peterson was born in 1887 and was a graduate of the University of Maryland School of Medicine and College of Physicians and Surgeons Baltimore in 1916 He settled in Brockton and joined the Massachusetts Medical Society in 1919 He is survived by his widow and two sons

### CORRESPONDENCE

#### PEPTIC ULCER

*Editor of the NEW ENGLAND JOURNAL OF MEDICINE*

Dear Sir

Dr Reginald Fitz asks in your issue of May 3rd—What Would You Do If You Had a Peptic Ulcer? A physician who is a victim of a malady is apt to acquire interest in it and perhaps some knowledge of how to deal with it Hyde Salter wrote on Asthma, Balfé on Diabetes Morrill Wyman on Autumnal Catarrh etc., etc Possibly the experience of a medico who as a sufferer and who saw many cases in hospital and private practice may be of interest

A doctor in his fourth decade perhaps its latter half began to have indigestion off and on At forty he had copious bleeding up and down and underwent the course of treatment which he usually carried out at that time—rest, starvation and rectal feeding for at least a fortnight. If the rectum be coöperative this treatment may be prolonged to thirty or more days The principle underlying it seems sound the maximum of rest and counts in the results of operative treatment

Bleeding has never recurred but symptoms persistent though varying in degree continued until the last diseased tooth was removed about two years ago Since then there have been no symptoms Meat and salt were much restricted in the diet, which was otherwise guided by experience Milk between meals was helpful Bismuth a teaspoonful before meals was taken off and on Soda was taken freely for years a teaspoonful more or less two to five or six times a day The amount was limited only by that needed for relief An occasional hypodermic of morphia was comforting and would have been taken

oftener but for the fear of dependency and increased dose. Once the stomach was washed and the procedure was so unpleasant that nothing short of dire necessity would have brought consent to repetition. Active work was carried on and regarded as salvation. Work distracts the mind as does smelling a fetid that of the balky horse. Pyloric spasm was not infrequent, but of such short duration that direct treatment for it did not seem worth while.

Operation was of course considered, but foregone mainly for the reason that the subject could never see how the cause of the disease—still obscure, is it not?—could be removed by the knife. There was no evidence of pyloric constriction.

The reporter, fully recognizing that he is a back number, ventures to sum up as follows:

Operation, formerly overdone, seems to be growing less frequent, and is probably falling into its proper place. Overemphasis is laid on the X-ray, the possible misinterpretation of which is a factor not to be slighted. Symptoms are usually diagnostic. Time does not press as in perforation. Experimental treatment, seldom prolonged, is a diagnostic aid and often brings sufficient relief. The X-ray, expensive in both money and time, can be held in reserve, and should not be regarded as always revealing the absolute truth. There is nothing for which we are consulted, save the neuroses, in which painstaking individualization is more loudly called for than in the management of peptic ulcer. If, as Kipling I think tells us, 'a manhole cover in anger is ten times worse than Hell', routine in medical practice is twenty or more times worse. Routine is for those without brains or for those who do not use them. Rules are for the unthinking. The thinking man knows but does not hesitate to break them.

The sin of egotism in this letter, which, in the main, agrees with Dr. Fitz's comprehensive statement, may, it is hoped, be not unpardonable. Somebody may derive comfort from this evidence that a man may tolerate a peptic ulcer and hyperacidity for forty years, lead an active life, and in his ninth decade be able to play two full rounds of golf in a day if he wants to, without ever having been operated on or X-rayed.

F C S

#### APPOINTMENT OF DR. CARL H. ERNLUND

The Commonwealth of Massachusetts  
Department of Public Health  
State House Boston

May 17, 1928

Editor, NEW ENGLAND JOURNAL OF MEDICINE

May I announce through your columns the appointment of Dr. Carl H. Ernlund as Assistant Visiting Laryngologist at the State Cancer Hospital at Pondville. As in the last analysis the quality of the service given there depends upon the quality of our visiting staff, we are certainly fortunate in being able to continue the standard already established by obtaining Dr. Ernlund's services.

Yours truly

GEORGE H. BIGELOW, M.D.  
Commissioner of Public Health

## NEWS ITEMS

**A CASE OF SMALLPOX IN MASSACHUSETTS**—The fourth case of smallpox in Massachusetts thus far reported in 1928 has been found in Greenfield.

The patient's brother, who lives in Connecticut, visited his relatives in Greenfield April 26, and after his return home was found to have the disease.

Connecticut has been afflicted with over one hundred cases.

As usual, neglect of vaccination is responsible for the development of smallpox.

**NEW HAMPSHIRE MEDICAL SOCIETY**—The following officers were elected at the Annual Meeting of the New Hampshire Medical Society held May 16: Dr. Joseph J. Cobb of Berlin, President; Dr. H. O. Smith of Hudson, Vice-President; Dr. D. E. Sullivan of Concord, Secretary; Treasurer, Dr. Clinton S. Abbott; named as councillor for Belknap County and Dr. H. T. Downing for Grafton County.

**NOMINATION OF DR. J. J. GOODWIN**—Dr. J. J. Goodwin of Clinton was nominated by Governor Fuller as Medical Examiner of Fourth Worcester District. The nomination was confirmed May 16.

## NOTICES

### ANNOUNCEMENT

Dr. Arthur Nicholson Broughton announces the removal of his office to 270 Commonwealth Avenue, Boston.

### CORRECTION

The degrees of Dr. Meyer Golob, which were published in our JOURNAL of May 3, should have read, Ph.G., M.D. instead of Ph.D., M.D.

### AN ANNOUNCEMENT WITH RESPECT TO A CLASSIFICATION OF WORKMEN'S COMPENSATION CASES

To the physicians of Lawrence, Methuen, Andover and North Andover and other physicians using the Lawrence General Hospital at Lawrence, Mass.

It is a pleasure to announce that the management of this Hospital, the largest hospital located in the north half of Essex County, has voted to classify Workmen's Compensation cases as private or semi-private, and are planning to arrange for semi-private rooms for their reception.

The family physician, or the physician in attendance upon the case, will be permitted to make the usual proper charge, whether he be a member of the Medical Staff or not, or whether he be on active Staff Service at the time or not.

This policy is in accord with the usual fair and honorable methods which this Hospital has always maintained towards the community and the medical profession.

## REPORTS AND NOTICES OF MEETINGS

### MIDDLESEX EAST DISTRICT MEDICAL SOCIETY

At the annual meeting of the Middlesex East District Medical Society held May 9, 1928, it was moved

and voted unanimously that the Middlesex East District Society record itself as in favor of a proper remuneration for all physicians taking care of any type of accident case covered by insurance and of a per capita charge by hospitals and that the Councilors be instructed to support any such measure as may be introduced in the Council

### THE NEW ENGLAND HEART ASSOCIATION

The New England Heart Association held its annual meeting at the Robert B Brigham Hospital May 17 1928

Dr William H Robey was reelected President. The other officers are Vice-president Miss Mabel Wilson Treasurer C E Cotting Secretary Dr Paul B Emerson Chairman of the Executive Committee Dr Samuel A Levine

Dr Hyman Green was elected to membership on the Board of Governors

### AMERICAN ASSOCIATION FOR THE STUDY OF FEEBLEMINDED

The American Association for the Study of the Feeble-minded will hold its annual meeting in Atlantic City May 31st to June 2nd inclusive with headquarters at Haddon Hall. The meeting this year has been designed to emphasize numerous practical aspects of the problem concerning the feeble-minded and speakers of national repute will present papers on a variety of these aspects. During the three-day session at Atlantic City the following phases of mental deficiency will be discussed—the sociological aspects pathological aspects psychological aspects administrative aspects of institutions for the care and training of mental defectives and the delinquency aspect.

Officers of the Association are as follows: President Edward R Johnstone who is the Director of the Training School at Vineland N J Vice-President George E McPherson M D who is Superintendent The Belchertown State School at Belchertown Mass Secretary Treasurer Howard W Potter M D Clinical Director of Letchworth Village at Thiells N Y

Physicians social workers psychologists nurses and others interested in problems associated with the care and training of the feeble-minded are cordially invited to attend this meeting

### AMERICAN ASSOCIATION FOR THE STUDY OF GOITER

The annual meeting of the American Association for the Study of Goiter will be held in Denver Colorado June 18 19 and 20 1928 Headquarters Cosmopolitan Hotel Scientific Sessions Medical Hall 1620 Court Place

The programme follows

#### FIRST DAY—MONDAY JUNE 18

##### MORNING

- 8 00—Diagnostic Clinic Denver General Hospital 250 West Eighth Avenue at Cherokee Street. Drs H S Plummer and S F Haines Rochester Minnesota
- 10 00—Diagnostic Clinic Colorado General Hospital 4200 East Ninth Avenue Dr William D Haggard Nashville Tennessee

#### AFTERNOON

##### Medical Hall 1620 Court Place

- 1 20—Address of Welcome—Hon B F Stapleton Mayor of Denver 'The Keys to the City'
- 1 40—Address of Welcome—Dr James J Waring President, Medical Society of the City and County of Denver 'Medical Progress by Association'
- 2 00—Dr Robert Olesen Representing United States Public Health Service 'What Shall Be Done About Goiter Prophylaxis?'
- 2 20—Dr Ralph Richards Salt Lake City Utah 'Utah Goiter Survey Including Examination of 110 000 Children'
- 2 40—Dr H D Kitchen, Representing Manitoba Health Department 'Adolescent Goiter'
- 3 00—Major F P Robeson U S A. Fitzsimons Hospital Denver Colorado 'Trophisms of Endocrinological Imbalance'
- 3 20—Dr J H Hutton Chicago Illinois 'Relation of Goiter to Other Endocrine Glands'
- 3 40—Dr J C Moore Seattle Washington 'Endemic Goiter and Cretinism (With the Quervain Film)'

#### SECOND DAY—TUESDAY, JUNE 19

##### MORNING

- 8 00—Operative Clinics
- At the several Denver Hospitals Cards of admission on application at the Medical Hall 1620 Court Place and at Association Headquarters Cosmopolitan Hotel

#### AFTERNOON

##### Medical Hall 1620 Court Place

- 1 00—Address—Professor B Breitner, von Elselberg Clinic, Vienna Austria 'The Iodine Question in Animal Experiments'
- 2 00—Dr W Blair Mosser University of Pennsylvania Thyroid Clinic, Philadelphia Pennsylvania 'The Effect of Iodine on the Thyroid Gland—An Experimental Study'
- 2 20—Drs W H Cole N A Womack and S M Gray Washington University St Louis Missouri 'The Thyroid in Systemic Infections Pathological Changes in Animal and Human Glands'
- 2 40—Dr Frost C Buchtel Denver Colorado 'Diagnosis of Adenoma of the Thyroid with Hyperthyroidism'
- 3 00—Dr Henry S Plummer Mayo Clinic, Rochester Minnesota 'Adenomatous Goiter'
- 3 20—Dr Arthur E Hertzler Halstead Kansas 'The Pathology of the Mixed Tumors of the Thyroid Gland'
- 3 40—Dr W M Simpson Dayton Ohio 'Malignant Diseases of the Thyroid Gland'
- 4 00—Dr W N Gillette Toledo Ohio 'The Surgical Pathology of the Thyroid Gland'
- 7 30—\*Banquet at the Denver Club

Everyone is urgently requested to obtain tickets early. In addition to the report and speeches, an uncensored movie film will be shown and a report of the Berne Conference made. Ladies invited.

#### THIRD DAY—WEDNESDAY JUNE 20

##### MORNING

##### Medical Hall 1620 Court Place

- 8 00—Dr J L DeCourcy DeCourcy Clinic, Cincinnati Ohio 'Toxic Psychosis and Goiter'
- 8 20—Dr Allen Graham Lakeside Hospital Clinic, Cleveland Ohio 'Dysthyroidism'

- 8 40—Dr J K McGregor, McGregor Mowbray Clinic, Hamilton, Ontario Canada "The Atypical Thyroid"
- 9 00—Dr H M Clute, Lahey Clinic, Boston Massachusetts "The Unusual Phases of Thyroid Disease"
- 9 20—Dr Arnold Jackson Jackson Clinic Madison, Wisconsin "The Use of Iodine in Hyperthyroidism"
- 9 40—Dr J Tate Mason, Seattle, Washington "Pre-operative Treatment of Exophthalmic Goiter"
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- 6 00—Supper at the Denver Motor Club House, Bear Creek Canon on return part of Motor Trip

## THE TRUDEAU SOCIETY

The next meeting of the Trudeau Society of Boston will be held on Monday evening, June 4 1928, at 8 15 P M in John Ware Hall Boston Medical Library 8 The Fenway, Boston

The speaker will be Dr Everts A. Graham of St Louis, subject "Remarks on Pulmonary Suppuration"

Physicians, medical students and nurses are cordially invited to attend this meeting

RANDALL CLIFFORD, *Secretary*

## BOSTON DISPENSARY

The June meeting of the Clinical Staff of the Boston Dispensary will be held at 25 Bennet Street on Thursday evening June 7th, at 8 00 o'clock.

The following papers will be presented by members of the Division of Research

1 A Study of Bleeding and Clotting Time Before and After Tonsillectomy' H J Inglis MD

2 The Diagnostic Value of Sugar Tests in Diabetes A Preliminary Report.' James H Townsend, MD

3 'The Diagnosis of Unilateral Diseases of the Kidney by Functional Tests' Harold T Chamberlin, MD, Joseph H Pratt, MD

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## BOOK REVIEWS

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This admirable textbook of gynecological nursing represents the standard methods and technic of the Barnes Hospital and the Washington University Dispensary at St Louis The first part presents a survey of pelvic anatomy, physiology and pathology and of the methods used in gynecologic examination, diagnosis, and treatment, nonoperative and operative The second part presents the details of a nurses duties in preparation, assistance examination, operation and care of patients The book is abundantly illustrated with 365 excellent engravings, including one admirable color plate of an anatomic median section, the frontispiece It is a very useful and valuable work for nurses and practitioners

*The Queen Charlotte's Practice of Obstetrics* by members of the Hospital Staff J BRIGHT BANISTER MD, FRCS ALFRED W BOMKE M.B, FRCS, TREVOR B DAVIES MD, FRCS L GARVEE RIVETT, M.C., FRCS L G PHILLIPS MS FRCS CS LARRY ROBERTS MS FRCS William Wood and Co, 1927 New York

This volume has been prepared in order to set before the profession the principles and methods of obstetrics practised at Queen Charlotte's Lying-in Hospital at London Those who are personally familiar with this famous institution will find on every page pleasant reminders of its interesting history and continuous service The book deals consecutively with development, anatomy, normal and abnormal pregnancy, labor, and puerperium, the healthy, the premature and the unhealthy baby, obstetric operations, and a variety of miscellaneous subjects It is an admirable epitome of the more conservative English obstetrics It is adequately illustrated with 270 text figures Not the least delightful of the illustrations is the charming portrait of Queen Charlotte which forms the frontispiece

# The New England Journal of Medicine

VOLUME 198

MAY 31, 1928

NUMBER 15

## STUDIES OF THE REDUNDANT COLON\*

BY FRANKLIN W. WHITE, M.D.†

THE study of the colon has been somewhat neglected in comparison with the intense research on the stomach and gall-bladder. The barium enema has not been used often enough. In routine X-ray examination in the past we have often looked at the twenty-four hour plate, seen the colon more or less filled and gone no further. In many clinics the barium enema has been used in only one-fifth or less of the gastro-intestinal cases.

The colon is worthy of investigation not only to detect the deformities of cancer, diverticulitis, or adhesions, but especially in cases of constipation to learn also the form, position and tone, the degree and mode of emptying, the types of peristalsis or segmentation. In this way important anomalies are discovered, one of the most interesting of which is the redundant colon.

Several of the members of this Association have recently studied this interesting condition and helped us to understand it. We are greatly indebted to the pioneer work of Mills<sup>1</sup>, to the clinical studies of Kantor<sup>2</sup>, to the statistical work of Larimore<sup>3</sup>, and also to the observations of Bryant<sup>4</sup> on the length of the intestine.

The ensuing data are based on a series of 43 cases. They show that the redundant colon is not uncommon, but is very frequently overlooked, and early wrong diagnoses have been the rule. It is associated with, and we believe is the cause of, important abdominal symptoms, such as colics, constipation, and flatulence. Formerly, it used to be discovered only as an occasional surprise at a surgical operation, and we had a wrong impression of the disease, as surgery discovered only the most severe cases. Now with the frequent use of the Roentgen ray we have a far better idea of its frequency, importance and diagnosis.

**Description.** The redundant colon is one that is too long for its owner, and is loosely attached, falling readily into loops and links. This is not a question of absolute length, as Bryant<sup>4</sup> has shown that there is considerable normal variation in the length of the colon, it is simply too long for the individual abdomen. The redundancy may be general, the whole colon may fit the abdomen badly, every part of it may be a

little too long and too loose, or it may be local, there is simply a long sigmoid loop, a double loop at the splenic or hepatic flexure, or a very long transverse colon. Over two-thirds of the important loops are found on the left side of the colon, in the sigmoid, descending colon or splenic flexure. This looping and kinking of the colon may interfere with its function, and cause mild, moderate, or even very severe symptoms, which lead to confusion with other kinds of abdominal disease.

For reasons given below under *diagnosis*, we have not included in our series cases described as hyperrotation of the colon, or over-descent of the cecum, where the hepatic flexure is in the normal position, the right side of the colon long and straight, and the cecum low (fig. 8), nor cases of non-fusion of the cecum (mobile cecum) (fig. 10).

The cause of redundant colon is usually considered to be congenital, and Larimore<sup>3</sup> has recently shown in a large series of enemata given to babies that infants have variations in length and local redundancies of the colon which duplicate those found in adults. There is some evidence that it is occasionally acquired by overloading and stretching the sigmoid and transverse colon in chronic constipation.

**Frequency.** The condition is not rare. It is found in 4% to 5%, at least, of patients with chronic indigestion, in other words, about as frequently as achylia gastrica. In 1000 consecutive private gastro-intestinal cases in whom histories, physical examination, test meals and Roentgen examinations were recorded, we found 43 cases with varying degrees of redundancy of the colon: in 9, or about 1%, it was marked, in 19, or about 2%, it was moderate, and in 15, or 15%, it was mild. This 43 per cent may fall considerably short of the number in which it was actually present, as barium enemata, which show the condition best, were only given in about one-third of the cases. Kantor<sup>2</sup>, in a similar series of 668 cases, found 9.2% redundant colons. It is difficult to give absolute figures representing frequency, and they are likely to vary somewhat with different authors according to what they consider "redundancy." Bryant's<sup>4</sup> post mortem figures give 15% of unusually long colons in 160 cases. Our lower figures may be accounted for

\*Read at the Annual Meeting of the American Gastro-Enterological Association, Atlantic City, May, 1927.

†For record and address of author see This Week's Issue, page 824.

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by the fact that many patients have few symptoms, or do not have a sufficiently careful examination to discover the redundancy during life

Contrary to our expectation, about two-thirds of the group were men, namely 26 men to 17 women. The average or strong physique predominated, only about one-third of the group were of the asthenic or ptotic type. One was a professional athlete, another a naval officer. The redundant colon is by no means confined to weak people.

**Anatomy** The position of the colon, and its loops, is related to the body form, the proportion of the size of the pelvis to the size of the upper



FIG 1 Redundant colon general type with long sigmoid wavy ascending and transverse colon with cecum low and median behind sigmoid loop

abdomen. A narrow pelvis and a wide thorax give a vertical rectum and pelvic colon and a vertical sigmoid loop. A wide pelvis and narrow thorax give a lower pelvic colon with a transverse sigmoid loop. The position of the redundant folds or loop was on the left side in the majority of cases, namely 24, with 16 in the sigmoid and 8 in the splenic flexure, this included most of the serious cases. In 3 there was general redundancy of the whole colon, and in 16 it involved the hepatic flexure. Here the loops were small and the symptoms mild with a few exceptions, in one of which the hepatic flexure passed up between the liver and diaphragm. We wish to emphasize two points first, the variability in the colon at different

times, both in length of loops and position in the abdomen, and second, the remarkable deformities of the stomach, which were occasionally found. The loose attachment of the redundant colon accounts for the variation in position and size of the loop at different times. This diversity was particularly true of the long sigmoid, which at one time would coil up in the pelvis, at another time would reach over to the cecum, and again would run up parallel with the splenic flexure, or fill the whole mid abdomen.

In a few cases, extraordinary and variable deformities of the stomach and duodenum were produced by the pressure, twisting and pulling of the great colon loops, especially when the left upper quadrant was filled with gas and feces in large left sided loops of the sigmoid and splenic flexure. The stomach was rolled up, inverted or pushed to the right, sometimes the pylorus and antrum were hidden behind the body of the stomach, at other times there was hour glass formation, or large pressure defects resembling cancer. These deformities are so variable they are usually best observed by the fluoroscope. In no other condition of the stomach have I seen such peculiar and variable deformities, except in large diaphragmatic hernias. At times the stomach would empty slowly and large six-hour residues be found, which might be absent at the next examination.

Only a few of the singular Roentgen pictures can be included on account of lack of space. We have chosen them to illustrate general redundancy and redundancy in different portions of the colon, several long sigmoids and descending colons and transverse colon loops, a large hepatic flexure (figs 1 to 7) and as a contrast a few examples of over descent of the cecum and mobile cecum (figs 8 and 10).

**Symptoms** Function is much more important than anatomy. A loop is not a stricture; it is only a *potential* cause of trouble. It has a tendency to obstruction when it is overfilled, twisted, or kinked, and symptoms may be present only at intervals when these conditions are present. Percy and VanLaere<sup>8</sup> have shown the importance of reflexes from the colon. Experimental distension of the colon in man produced nausea, loss of appetite, inhibition of peristalsis and of normal tonus in the stomach, irregularity of pulse and changes in blood pressure, more marked distension caused vomiting.

There is no reasonable doubt that the redundant colon is an actual cause of dysfunction, and that from one half to two thirds of the cases have symptoms of obstructive or toxic type. These, in order of frequency, were constipation, abdominal pain or distress, flatulence, distension, vomiting, diarrhea, variable tumor, occasionally there was long delay in emptying the stomach. Other less definite symptoms, such as, headache, malaise, irritability, fatigue were often found, they may have been simply coincident.



FIG 2 Redundant colon with long sigmoid loop reaching up almost to splenic flexure



FIG 4 Redundant colon with large sigmoid loop filling the whole left abdomen



FIG 3 Redundant colon with large sigmoid loop filling mid abdomen



FIG 5 Redundant colon with very long sigmoid and descending colon, one of which passes in front of the transverse colon



FIG 6 Redundant colon with very long transverse colon



FIG 8 Hyperrotation of colon with overdescent of the cecum. Note the normal or high position of the hepatic flexure, the long descending colon and low cecum. (Type of case not included in our series)



FIG 7 Redundant colon with very large hepatic flexure (H) and long sigmoid loop which lies in front of cecum



FIG 9 Redundant colon with long sigmoid loop; long transverse colon and cecum in mid abdomen

The severity of these symptoms did not always correspond to the length of the loops, but rather to the degree of disturbance of colon function, the tone of the colon and abdominal wall, and the sensitiveness of the nervous system. In general, the longer the loop and the poorer the muscular tone, the more likely we were to find trouble. The symptoms like those of diaphragmatic hernia were easy to understand after X-ray pictures were taken, and the diagnosis established, but the lesion was practically impossible to diagnose definitely without the Roentgen ray. With single long loops, we found more violent attacks, and with general redundancy more chronic grumbling symptoms, such as, abdominal distress, flatulence and chronic constipation. One-third or more of the cases had no definite symptoms. We have latent cases of all ages now under observation. A series of case reports of especially interesting redundant colons were described by the author in the *Medical Clinics of North America*, 1925, volume 8, page 1611.

It seems remarkable that a congenital trouble can be so often latent. Our only explanation is that in good health the condition is compensated, and normal colon function maintained, much as organic heart disease is compensated, but under strain, fatigue, infection, or increasing age there is loss of muscular tone, compensation breaks and symptoms appear. Thus a condition of the colon present since birth may not develop symptoms till long afterward. It is very desirable to examine each colon carefully as we do each heart to discover any abnormality which may threaten health.

*Constipation* was the commonest symptom, being found in 30 cases, or about 70%. It usually was of many years' duration, and the patients were laxative and enema habitués. This is easy to understand on account of the mechanical hindrance offered to the emptying of the bowel. Occasional long intervals between stools of 3 to 7 days were quite characteristic. The stools were often small, hard and dry from long drying out in the colon, occasionally there was a sudden copious unloading of accumulated feces.

*Gas with abdominal distress* was found in 27 cases, or about 63%. We have considered this also as a partial obstruction symptom. It may also be due, as Kantor has pointed out, to poor absorption of intestinal gases by interference with blood supply to the colon, by twisting and kinking of the colon loops. It was often general sometimes in the upper abdomen, sometimes in the lower. It was associated many times with cribbing and belching gas, and was naturally relieved by passing flatus or the use of enemata.

*Pain in the abdomen* has been an important symptom, present in 27 cases, or 62%. This has varied in degree from mild grumbling to violent colic, and has led to many wrong diagnoses. It

has often been general, and sometimes variable in place which is easily understood from the varying position of the colon loops, and varying degrees of pressure, twisting and obstruction. When local it has been twice as frequent on the left as on the right side. Occasionally an obstruction in the sigmoid may give pain or distress in the right side or right lower quadrant, by throwing back the fecal column into the cecum. Acute intestinal obstruction of the colon may occur rarely. Volvulus of the colon, which usually involves the sigmoid, is never found un-



FIG 10 Non fusion of cecum or mobile cecum. The large cecum (C) occupies the middle of the abdomen. (Type of case not included in our series.)

less the colon is redundant. No case in this group has required operation for acute intestinal obstruction (volvulus), but one or two cases came dangerously near it.

*Vomiting and Diarrhea* have been occasional symptoms. Vomiting occurred in 12 and diarrhea in 4 cases of the group. These are not distinctive symptoms, but simply show the presence of abdominal disturbance and reversed or hurried peristalsis. The vomitus has not been characteristic, and the diarrhea was evidently due to colon irritation, or the unloading of a partly obstructed bowel. Mucus was occasionally present in the feces, but no blood.

The other vague symptoms, such as, headaches, malaise, irritability, fatigue etc., may be due to partial intestinal obstruction and toxic absorption, or may be of purely nervous origin.

*Intermittent Tumor* was a feature in 3 cases, obviously due to colon loops, or obstructed colon filled with feces or gas. Serious tumors of the

bowel were suspected until their nature was discovered.

It is interesting to note how very closely this group of 43 cases compares in frequency, sex, relation to ptosis and asthenia, colon outline and frequency of symptoms with the series of 62 cases recently reported by Kantor.<sup>2</sup> We must be dealing with a definite entity with a fairly constant incidence and clinical picture.

**Diagnosis** In not one case in our group has a positive diagnosis been made until after the Roentgen examination. The symptoms are logical and easily understood when once the diagnosis is made, but are of a general character and alone are not diagnostic. There is a close similarity in this respect with the rare condition, diaphragmatic hernia of the stomach.

The Roentgen picture has already been sufficiently emphasized the position, variability and extent of the loops of colon, the hepatic flexure sliding up between the liver and diaphragm, the gaseous distention of flexures and loops, the delay in emptying the colon and the occasional strange appearance of the stomach. Both barium meal and enema have their place in diagnosis, the meal to show the effect of the lesion on the emptying of the bowel, and the enema to fill the whole colon at once and outline the loops. Some redundant colons will show well on the plate taken 24 hours after a barium meal, but most do not, and all are much more clear and definite with the barium enema. The neglect of the barium enema in routine gastrointestinal examinations is one reason for the condition's being overlooked. The enema is often omitted because some definite pathology in the stomach, gall-bladder, esophagus, or appendix is discovered in the previous examination.

We are sorry to add anything to the already complex X-Ray routine, consisting of barium meal, gall-bladder plates, cholecystography, etc., but we urge the more frequent use of the diagnostic enema, especially in constipated persons and in those whose previous X-Ray examination was negative. If this is done, more redundant colons will be discovered, while if the enema is only occasionally used, some cases will be missed.

The diagnosis is easy in the well marked cases, but it is not always easy to draw the line between normal variations in the colon and mild redundancy. It is well to be conservative in diagnosis, and not include too many mild cases in this group. Too much importance must not be attached to a sigmoid loop a few inches longer than the average, or an hepatic flexure, or a descending colon that is a little wavy. There is considerable normal variation in the length of the colon, as shown by Bryant's figures already quoted. My impression is that there are many moderate and mild, and some severe cases.

An objection may be made to diagnosis by barium enema, in that it is not physiologic to fill the colon from below, and that we may have dis-

tended it and made it appear abnormal, but our experience leads us to believe that we are not dealing with artifacts, but with an actual condition, which corresponds frequently with changes found by the barium meal, and which is a frequent cause of colon malfunction and disagreeable symptoms. The same low pressure is used for all barium enema work, though in redundant cases the usual quart may fill only the lower colon, and two, three or four times the usual amount may be needed to outline the whole colon.

The painful attacks have led to much confusion with other kinds of abdominal disease, in fact, early wrong diagnoses have been the rule in our series. Two cases had an operation for supposed appendicitis. Two others had been diagnosed as abdominal cancer. In others gall bladder disease, gastric and duodenal ulcer, diverticulitis and Dietl's crises had been considered. In several others the intermittent fecal tumors had caused confusion.

It is, of course, very important to avoid wrong diagnoses of other lesions which produce colics, abdominal distress, pain, or tumor and thus avoid unnecessary exploratory operation, and the removal of harmless organs. As previously stated, in no other disease are such strikingly peculiar and variable deformities of the stomach seen, except in diaphragmatic hernia.

We wish to avoid overclassification of the anomalies of the colon, but there are two conditions of the right colon which we have not included in our series, as their incidence and symptomatology appear somewhat different. These are (1) hyperrotation of the colon, over descent of the cecum, or low cecum, and (2) non-fusion of the cecum or mobile cecum.

In low cecum cases (which should not be confused with ptosis of the cecum), the embryologic rotation of the colon called "descent" is excessive, and instead of the cecum coming to rest in the right iliac fossa, it continues on into the pelvis, a condition called "hyperrotation" or "overdescent." We have the hepatic flexure in the normal or high position, a long straight or slightly curved ascending colon and a low cecum (fig 8). A group of these cases studied by Kantor showed a large majority of females (79%), and asthenics (54%), with vomiting in 59%, which is quite the reverse of our redundant colon series with females 40%, asthenics 33% and vomiting 28%.

In the mobile cecum cases, the ascending colon, instead of being fixed to the posterior abdominal wall, is provided with a mesentery which leaves the cecum abnormally mobile and often large and atonic (fig 10). In some cases the mobile cecum is the only anomaly, it is not fair to class such cases with redundant colons simply because the cecum is very mobile. Often the mobile cecum is combined with general redundancy, the cecum is loosely attached and the rest of the colon also (compare figs 9 and 10).

It seems possible that the difference between the usual redundant colon and "megacolon" may sometimes be simply one of degree. Some cases of megacolon may be only an extreme congenital type of redundant colon discovered early in life on account of serious dysfunction causing marked symptoms. The colon is always greatly lengthened, folded and atonic, and about one-third of the cases of megacolon show involvement of the colon in its sigmoid portion only.

**Treatment.** A glance at some of the Roentgen pictures will show that we can never expect to make such colons anatomically normal but we can often restore normal function, and make the patient symptom free. There is always an accidental feature in these cases, some of the patients with large and long loops may go for long periods without chronic symptoms or an acute attack.

We have treated the bowel gently and let it alone as far as possible. Stimulating laxatives and cathartics have usually added to the irritation and spasm and often made matters worse. Instead of these we have lubricated the bowel from above and below by mineral oil by mouth and six ounce oil injections at bedtime which were retained if possible over night. Enemata can often be avoided, but we occasionally use bland enemata of bicarbonate of soda 2 teaspoons to the quart of warm water, which is less irritating than the usual soapsuds. Some cases may require a more stimulating enema, a bland one is "lost in the bowel" and does not return.

A bulky diet is essential, including plenty of cooked fruit pulp and mashed vegetables which when there is much irritation of the bowel are often better than coarser food such as, bran and raw vegetables. Rest and tonic measures with abdominal exercises and massage are useful and occasionally sedatives and belladonna. Medical treatment has greatly improved a majority of the patients, especially those in whom

the condition was of mild and moderate grade and even some in whom it was severe. The unloading and untwisting of the colon loops, the avoidance of irritation and the recovery of muscular tone has often improved the anatomy and function of the bowel to a surprising degree.

No surgery such as fixation of the colon or resection of loops has been attempted in this group as it seemed likely to make matters worse. One large cecum was plicated with rather poor results. A twist of the sigmoid (volvulus) with serious acute obstruction requires immediate surgery.

**Summary.** The redundant colon is a definite entity which is fairly common and quite frequently overlooked, and early wrong diagnoses are the rule. It is more common in men than in women and in persons of vigorous physique. The commonest symptoms are constipation, abdominal distress or pain, flatulence and distension. About one-third of the cases have no definite symptoms. It is important to remember the redundant colon when general abdominal symptoms or painful attacks are present in order to avoid wrong diagnoses of other lesions which produce similar symptoms. No other disease causes such peculiar variable deformities of the stomach except diaphragmatic hernia. A barium enema shows the lesions best and if the enema is only occasionally used, some cases will be missed. Medical treatment will cause great improvement in the majority of cases.

I wish to acknowledge my indebtedness to Dr. Lawrie B. Morrison of Boston for valuable suggestions and for several of the illustrations.

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## RABIES

### The Treatment of Wounds and Prevention of the Disease\*

BY M. J. ROSENAU, M.D.†

WE know enough about the cause and mode of propagation of rabies to control and even to prevent the spread of the infection. In fact, the disease has been entirely eliminated from England, Scandinavia and other insular and peninsular countries. Through the enforcement of a strict quarantine, rabies has been kept out

of Australia. Furthermore, the prompt and proper treatment of wounds inflicted by mad animals will greatly diminish the likelihood of the development of rabies. Finally, thanks to the genius of Pasteur, we are able to immunize and protect those who are bitten.

The cauterization of the wound and the Pasteur prophylactic treatment are efficient preventive measures for the individual, but they are not the true and best methods of controlling and preventing the disease. We should not wait until persons are bitten by mad dogs, but should direct measures towards the dog. Rabies is primarily a disease of dogs, secondarily of man

This article written at the request of Dr. George H. Bigelow, Commissioner of Public Health, is designed to bring up to date and emphasize two of the important practical points, namely, the correct treatment of the wounds and the prevention of the disease in accordance with recent advances. Part of this article is abstracted from the chapter on Rabies in my book "Preventive Medicine and Hygiene" (fifth edition) published by D. Appleton and Company to which the reader is referred for further details.

†For record and address of author see "This Week's Issue" page 5-4.

It is kept alive in nature mainly by the dog and the dog family. The stray pariah dog causes most of the trouble in our communities. The control of the disease demands that laws concerning the compulsory impounding of all stray animals and the proper supervision of all licensed dogs be strictly enforced. The problem cannot be settled locally, but requires nationwide action, for one locality or state which might free itself of this disease would soon become reinfected from neighboring states.

Rabies is remarkable in several particulars, especially the period of incubation and high mortality. The period of incubation is more variable and more prolonged than that of any other acute infection. Rabies is practically the only disease in the entire medical repertoire which is almost invariably fatal after symptoms once begin. The mortality is practically 100 per cent. Recovery either in man or animals is so rare as to be a scientific curiosity and a subject of much discussion. Effective preventive measures must therefore begin as soon as practicable after the infliction of the wound.

#### LOCAL TREATMENT OF THE WOUND

We have a satisfactory and effective method of preventing rabies, provided the wound produced by a rabid animal be *promptly* and *properly* treated. Treatment consists in cauterizing the wound with "fuming" or strong nitric acid, making certain that the acid is applied to every part of the surface. This matter of the prompt and proper cauterization of wounds produced by the bites of animals is not well understood, and therefore is emphasized on account of its prophylactic value. The technic follows:

##### *Cauterization with Nitric Acid*

Wounds produced by the bite of an animal, in which there is any possibility of rabies, should at once be cauterized with "fuming" or strong nitric acid. The acid is best applied with a glass rod very thoroughly to all parts of the wound, care being taken that pockets and recesses do not escape. Punctured wounds should be laid open to allow proper cauterization. Experiments in my laboratory indicate the importance also of cauterizing the edges of the skin. Thorough cauterization with nitric acid reduces the danger of wound complications, and experience demonstrates that wounds *promptly* and *thoroughly* cauterized with nitric acid are seldom followed by rabies. Experiments under my supervision (unpublished) indicate that practically all guinea pigs may be saved by prompt application of nitric acid, that its effectiveness decreases with time, but that it is still partially protective up to forty eight hours.

Experience here and elsewhere indicates that it is still the common practice timidly to cauterize wounds with substances that we know are not effective, such as nitrate of silver (lunar caustic). It has been demonstrated conclusively

that nitrate of silver coagulates the surface albumin and does not penetrate, and therefore does not protect. We have demonstrated to our entire satisfaction that even such strong caustic and germicidal substances as pure carbolic acid, corrosive sublimate, strong formaldehyde solution and permanganate of potash are only partially effective. Even the actual cautery—thoroughly applied does not give as good results as nitric acid.

Just why nitric acid has this special selective action in destroying the virus of rabies in wounds is not entirely clear. On account of its diffusibility and penetration, it may be considered almost specific for rabies.

Physicians are inclined to withhold their hand when it comes to cauterizing wounds of the face with nitric acid because they fear scarring. A wound on the face or anywhere else will leave a scar whether cauterized or not, and there is little if any additional scarring due to cauterization with nitric acid.

It is well known that wounds of the face and other parts of the body where the naked skin is exposed to bites are especially liable to be followed by rabies. The reason why bites of the arms, legs and body are less dangerous is that the virus is apt to be wiped off when the teeth of a mad animal bite through the clothing. Furthermore, it is well known that the liability to rabies increases not only with the character, severity and number of the wounds, but with their location, the most dangerous being those in regions where the nerve supply is rich.

#### SUSCEPTIBLE ANIMALS

Every mammal is susceptible. Even birds may contract the disease. It is most common in dogs, but it also occurs frequently in wolves, jackals, foxes and hyenas. Rabies in cats and skunks is comparatively rare and but occasionally transmitted to man. Cattle, sheep and goats are infected relatively in about the same degree. It is less common in horses. Swine contract the disease less frequently than other domestic animals.

Rabies is perpetuated in civilized communities almost exclusively by the domestic dog and to a small extent by wild animals of the dog family.

#### PERIOD OF INCUBATION

From the standpoint of prevention it is fortunate that the period of incubation of this disease is prolonged. This period varies from fourteen days to a year or more. Such prolonged periods of incubation indicate latency. The average period is as follows: Man, forty days (apt to be shorter in children or following bites on the face), dogs, twenty-one to forty days, horses, twenty-eight to fifty-six days, cows, twenty-eight to fifty-six days, pigs, fourteen to twenty-one days, goats and sheep, twenty-one to twenty-eight days, birds, fourteen to forty days.

The period of incubation depends upon the amount and virulence of the virus and the nature and site of the wound, especially with reference to the nerve supply. It requires about fifteen days, counting from the last injection, to induce an active immunity to the disease by means of the Pasteur preventive treatment. There is, therefore, usually sufficient time, if started early, to prevent the development of symptoms. But, there is no time to lose and delays are hazardous.

It is probable that the prolonged and variable period of incubation is due in part to the fact that it takes time for the virus to travel along the nerves to the central nervous system, and that it may there remain dormant (latent) until conditions favor multiplication.

#### PROPHYLACTIC TREATMENT

Pasteur announced his prophylactic method on December 6, 1883, at the International Congress at Copenhagen, and on February 24, 1884, he laid before the French Academy the details of his experiments and results. For many years the classic Pasteur method was used but in time it was modified and improved in several particulars. In 1911, Lieutenant-Colonel Sir D. Semple<sup>1</sup> published the results of his studies with fixed virus killed with phenol. This dead virus is injected subcutaneously daily for fourteen days. The method was first tried out in India with good results. Its simplicity and relative safety made an appeal which caused it to grow in popularity and it is rapidly becoming the method of choice. In view of the fact that it has only recently been introduced into this country, a brief description of the method and its results follow.

##### *The Semple Method*

The material for the prophylactic injections is prepared from the fresh fixed virus in the brain medulla and spinal cord of rabbits. This is ground in sterile salt solution containing one per cent carbolic acid, strained through fine muslin and kept at 37°C for 24 hours. At the end of this period the virus is dead—at least Semple found that it is not infective when injected into susceptible animals. The material is now diluted with an equal volume of sterile normal saline solution. This final dilution contains four per cent of the dead virus in 0.5 per cent carbolic acid normal saline solution. The dose is 2.5 cc injected into the subcutaneous tissues of the abdominal walls once a day for 14 days.

The advantages of the Semple method consist first of all in its efficiency and the relative infrequency of paralytic complications. It is meeting with favor, furthermore, because it is economical and simple, and the virus may be preserved for shipment. Gloster and Taylor<sup>2</sup> studied the keeping properties of carbolized anti-rabic vaccine and found that it retains a high

degree of immunizing power for a period of two months from date of manufacture, no difference being found in its protecting value whether kept in cold storage or at the shade temperatures of Rangoon with monthly mean temperatures varying from 86.2°F to 87.4°F and a maximum day temperature of 99.7°F.

Many thousands of persons have been treated by the Semple method and, so far as records are available, with satisfactory results. It is often stated that the Semple method is quite as efficient, safer and simpler than any other modification of the Pasteur prophylactic treatment. This comparative statement deserves critical analysis, for the figures are not statistically comparable; they are obtained in different countries, at different times, recorded and edited in accordance with different plans. In some localities and at certain times rabies is much more virulent than in other localities and at other times. Even when all these factors are considered, the results of the Semple method remain favorable.

The Health Organization of the League of Nations recently held an international conference on rabies, the results of which have been published in a supplement to the *Annales de l'Institut Pasteur*, 1928, which has just arrived. This report contains the details concerning the subject of rabies brought up to date. There are recorded 5,035 cases treated by the Semple method, with 8 deaths, only one of which is described as a failure. Table I gives results of treatment.

Table II gives the incidence of paralysis following treatment by the Semple method.

Dr G. W. McCoy, Director of the Hygienic Laboratory of the U. S. Public Health Service, writes me under date of April 20, 1928: "A couple of years ago we collected data on the Semple method and found it had been used at that time in perhaps twenty thousand cases in the United States with an exceedingly low failure rate and a complete absence of cases showing paralysis. Since then the method has become even more popular and we still have to hear of an authentic case of paralysis although we have heard of a few failures to prevent rabies."

It is stated in the *Weekly Bulletin of the Department of Health of New York City*, November 12, 1927, that "further tests are to be made on a series of guinea pigs as to the efficacy of the Semple vaccine. The results of immunological tests on a small series of guinea pigs show it to be at least as good if not better than vaccine produced by the Pasteur Method." A letter from Dr. Anna W. Williams, dated April 27, 1928, reports the following results with vaccine prepared by the Semple method in the laboratory of the New York City Health Department:

2 cc. of a 4 per cent. emulsion begun August 23, 1926.  
Cases treated to March 15, 1928, 4,841—over one-half as many as in the 13 previous years.



TABLE I  
RESULTS OF TREATMENT BY THE SEMPLE METHOD\*

Antirabies Stations	Injections	Annual Average Number of Persons Treated	Mortality Percentage
Bombay (Inst Haffkine).....	14 days treatment	2 875	2 12-0 11
Calcutta .....	14 " "	5,000	4 7-0 5
Shanghai .....	15 " "	130	7 7 1 2
Columbus (Ohio).....	15 " "	681	
Coonoor (British India).....	14 " "	3,131	1 075 0 75
Cuba (Inst Santa Clara).....	14 " "	150	0
Hongkong .....	12 " "	66	0
Jerusalem .....	14 " "	858	2 5 0 60
Kasauli (British India).....	14 " "	4,030	1 76
Lisbon (Inst Camara Pestana).....	15 " (40 inj)	1,669	1 75-0 11
Lwow (Poland) .....	20 " treatment	1,338	0 059
Philadelphia .....	14 " "		0 5
Rangoon (Dutch East Indies).....	14 " "	466	0 22
Rome .....	15 25 days	496	0 16
Schillong (British India).....	14 " "	1 503	0 41

TABLE II  
PARALYSIS FOLLOWING TREATMENT BY THE SEMPLE METHOD\*

Location of Institute	Name of Director	Number of Cases of Paralysis	Number of Wounds Treated	Percentage
Shanghai	Jordan	0	465	0
Kasauli	Cunningham	3	84 844	0 035 or 1/28,281
Shillong	Hodgson	0	13,532	0
Rangoon	Taylor	0	5,125	0
Calcutta	—	0	11,083	0
Bombay	Morison	0	11 000	0
Santa Clara (Cuba)	Lorenzo	0	584	0

One case of paralysis reported a few weeks ago re covering  
Deaths after 15 days—2 mortality 0 04  
Patients bitten by rabid animals, 1467  
Corrected mortality 0 14

Dr Williams writes further "The following is a summary of reasons in favor of using the Semple vaccine

"It retains its maximum potency and powers of immunization for a period of at least three months away from light and in an icebox

"The vaccine contains the smallest amount of nerve tissue commensurate with efficient treatment, and thereby are avoided the so called post-treatment paralyses which occasionally follow certain other methods of treatment

"The dosage is more accurate than the attenuated cord method since the cords vary very much in size. In a large cord desiccation and attenuation proceed more slowly than in a small cord. For this reason, the virulence of various cords dried for the same number of days will vary

"The Semple vaccine is less costly. The average spinal cord will measure about eight inches, producing twenty doses at six cc each, or sixty doses at two cc each as used in the Pasteur method. The average rabbit brain weighs about seven grams, producing one hun-

dred doses of two cc of a four per cent. emulsion (one hundred and sixty doses five cc of one per cent emulsion)

"Semple vaccine is more convenient as it may be produced in quantity and the whole treatment sent in one shipment. This will greatly reduce the necessary clerical work and the possibility of errors due to non delivery by mail

"All doses of the Semple vaccine are the same regardless of age, sex, severity of the bite or location of the wound. The fourteen-dose treatment is regarded as sufficient for all types of cases

"Brain matter is said by Nitsch to be ten times more virulent than spinal cord. In using brain we are giving a large proportion of specific antibody-producing substance and a smaller one of the useless, probably harmful, nervous tissue than is given in methods of cord immunization "

Dr A B Wadsworth, Director of the Division of Laboratories and Research of the State Department of Health of New York, writes me "Since the Semple method was adopted in November, 1926, we have reports of 148 persons who received treatments. In no case was paralysis reported or development of rabies, following treatment. The same holds true of the records of the Division of Communicable Diseases, which

include all persons treated in the State, exclusive of New York City."

Lieutenant-Colonel J W Cornwall\* of the Pasteur Institute of Southern India, Coonoor, Madras, presented to the congress in Strasbourg the following statement concerning results. The Institute has been working for 16 years and 28,898 persons have received the Semple treatment

Total number treated	28 898
Died during treatment	45 or 0.15 per cent.
Died less than 15 days after completion of treatment	78 or 0.27 per cent.
Died more than 15 days after completion of treatment	200 or 1.70 per cent.
Total mortality	323 or 1.11 per cent.
Percentage of failures	0.7

### When to Give the Prophylactic

It is sometimes difficult to decide whether the prophylactic treatment should be given. Treatment causes sufficient personal inconvenience, not to speak of the danger (however slight) of paralysis, to avoid advising it if unnecessary. In many cases it is impossible to discover whether the dog that inflicted the bite is mad or not. The rule in cases of doubtful exposure is to advise the treatment.

Persons who apply for treatment of dogbites fall into one of the seven following categories with reference to the Pasteur prophylactic or one of its modifications, such as the Semple method.

1 The dog is mad. In this case, begin treatment at once.

2 The dog shows suggestive symptoms. Give the treatment at once. In communities having skilled laboratory facilities wait for diagnosis, provided this is done promptly.

3 The dog is not mad. Observe it carefully for ten days and if no symptoms develop there is no danger of rabies in the person bitten. The treatment is therefore unnecessary. (The dog may nevertheless develop rabies after

ten days and if it has been bitten by another dog should be kept in quarantine for six months.)

4 The dog is not identified. This is a common occurrence, especially with children. The rule in such cases is to advise the prophylactic treatment, except in regions known to be free of rabies.

5 Exposure to saliva. Persons not infrequently apply for advice giving the following history. They have not been bitten but they have been licked on the hands and face by a dog that subsequently was discovered to have the disease. Persons are sometimes similarly exposed by washing the mouth of a rabid horse. In these cases the important question is whether there were fissures or abrasions in the skin at the time. There may be little wounds in the skin not evident to the naked eye. It is possible to infect animals by rubbing the virus on the shaved skin. The rule is therefore to advise the protection which the treatment affords in persons thus exposed.

6 In psychoneurotic patients with a distressing phobia of rabies, it may afford comfort to give a mild course of treatment as much for its psychotherapeutic effect as for specific immunity.

7 Fomites. The question is often asked whether the disease may not be contracted from contact with virus in saliva upon floors, on playthings and other objects. The situation arises with a rabid dog in the house, where children may be exposed in this indirect manner. While theoretically possible, the danger is small, in fact, I have never heard of a case contracted in any such way.

The virus is not infective by the mouth.

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## BILATERAL CAVERNOUS SINUS THROMBOSIS

### Nasal and Eye-Lid Infection

BY JOSIAH E. QUINCY, M.D.\*

ON October 8th last, the writer was called in consultation to see a man aged 39. The history was that of a hordeolum on the left lower lid two weeks previously, which healed under a physician's care. One week following, there appeared a hordeolum on the right lower lid, accompanied by a small furuncle on the lateral wall of the right nasal vestibule. There was slight pain over the right side of the face. The temperature had been 103° for three days.

Examination revealed a well nourished white man with a striking right-sided facial infection but no line of demarcation. The right eye-lids were so nearly shut by edema that voluntary opening was impossible. On separating the lids the eye-ball was voluntarily immovable with considerable intra-ocular tension. The nasal mucous membrane was red, dry, glistening and swollen, particularly on the right side.

After shrinking the nasal mucous membrane with a 4% solution of cocaine and epinephrine there was no visible pus and no evidence of localized furunculosis or septal infection. The throat was dry and red throughout. The ears were negative. The neck was not stiff. The superficial and deep reflexes were

For record and address of author see *This Week's Issue* page 824

normal During the course of the examination the patient had an attack of projectile vomiting, which was the first one

Realizing the possibilities of the case, the patient was admitted to the hospital immediately and local measures for treating erysipelas ordered, namely, saturated solution of magnesium sulphate compresses, adrenalin inhalant nasal spray, sponge bath for temperature, forced fluids, and erysipelas precautions The temperature remained at 103° to 104° the next two days, and there was no sign of improvement.

On the fourth day, October 11, 20 c.c. of Squibb's erysipelas antitoxin were given intramuscularly A gradual drop in temperature to 101° followed this injection The pulse and respirations remained in proportion to the temperature At this time there was some redness and swelling of the left eye lids, though the patient could open them voluntarily, the palpebral fissure was markedly narrowed The bridge of the nose remained clear

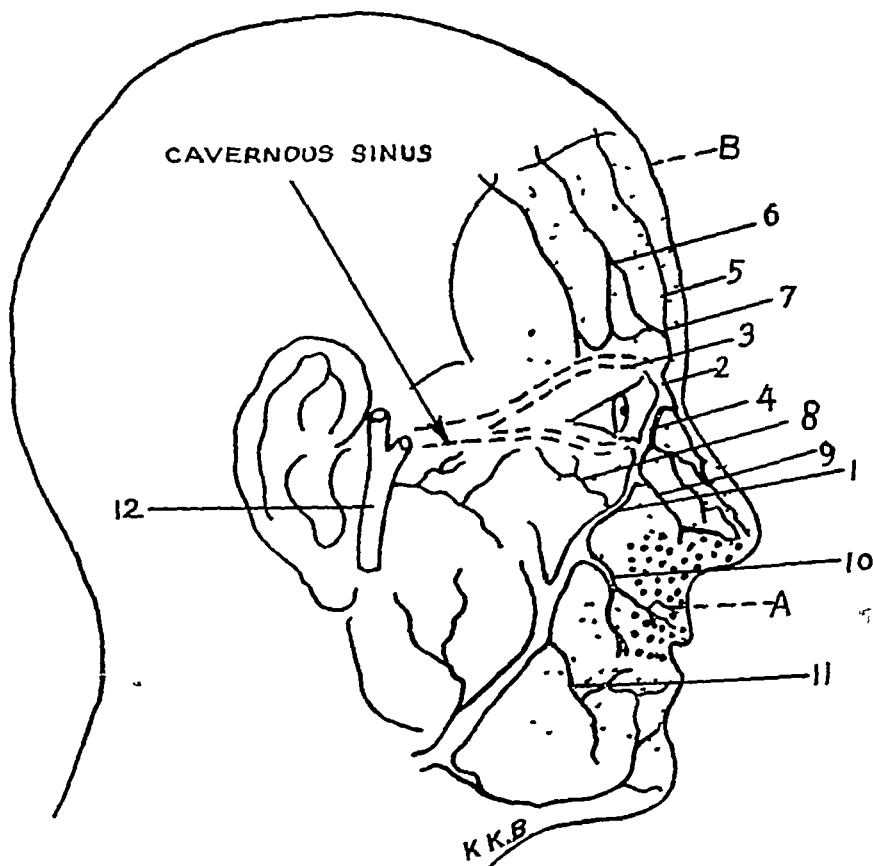
October 12, the same dose of antitoxin was given intramuscularly There was a sudden rise in temperature that night. In the afternoon there was a definite stiff neck, positive Babinski and Kernig signs on both sides

Consultants agreed that we were dealing with a cavernous sinus thrombosis of acute fulminating type, caused by infection of the eye lids and possibly

furuncle of the right side of the nose with an ascending infection through the nasal and angular veins to the ophthalmics, thence to the cavernous sinus on the right side, and by continuity to the left side There was no question about there being some involvement of the meninges at this time A blood culture was taken which showed staphylococci with rare streptococci The fundi and spinal fluid were not examined The urinalysis was negative No hope was given for recovery The patient died the following morning, October 13, at 3:45, five days after we had first seen him, and eight days after the onset of high temperature The report on the autopsy done by Dr. Tracy B. Mallory at the Massachusetts General Hospital is quoted in part as follows

**Head** The calvarium was removed without difficulty The longitudinal, lateral and petrosal sinuses were negative The dura was not thickened The pia was injected but showed no exudate The vessels in the Circle of Willis were negative The right cavernous sinus was filled with blood tinged pus This extended forward to the beginning of the ophthalmic vein. The left cavernous sinus contained a small thrombus and also a small amount of purulent exudate The middle ears were negative The ethmoidal cells, frontal sinuses, and sphenoidal antra were negative

**Brain** Weight, 1345 grams Except for moderate congestion it was entirely negative



- 1 Anterior Facial Vein
- 2 Angular Vein
- 3 Superior Ophthalmic Vein
- 4 Inferior Ophthalmic Vein
- 5 Frontal Vein
- 6 Supraorbital Vein

- 7 Superior Palpebral Vein
- 8 Inferior Palpebral Vein
- 9 Nasal Vein
- 10 Superior Labial Vein
- 11 Inferior Labial Vein
- 12 Temporal Vein

A. Heavy dotted area around nose and upper lip is the critical area of face infection  
B. Light dotted area is danger zone for face infection

**Bacteriologic Examination**—Smear from right cavernous sinus showed streptococci and staphylococci

Left sinus culture showed staphylococcus aureus

Right sinus culture showed staphylococcus aureus and streptococcus hemolyticus (rare)

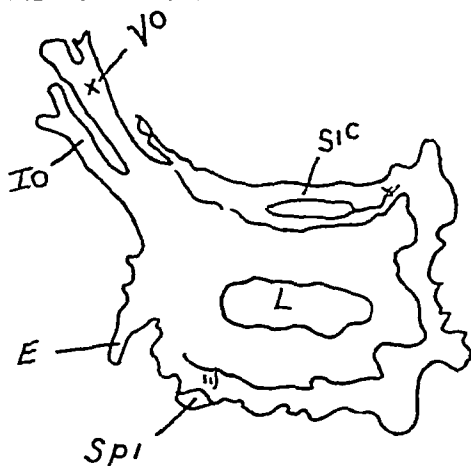
Blood culture B. coli. Staphylococcus aureus (rare)

No histological slides were made

**Comment** This is nearly a reduplication of Eagleton's case no 11 in his report of 25 cases of cavernous sinus thrombosis, in which there was a strep on the eyelid, but with slight symptoms until an embolic occlusion of the ophthalmic vessels twelve hours before death. There are many cases of cavernous sinus infection reported in the literature (see bibliography), but few caused by infection of the eyelid and furuncle of the nose. Turner and Reynolds report a case in which the primary source was a furuncle situated on the inner aspect of the right ala nasi. At the Massachusetts Eye and Ear Infirmary there has been only one such case in the past five years. Autopsy showed pus in the right cavernous sinus. An interesting fact is the usual extension of the infection from the homogeneous side to the opposite cavernous sinus by continuity through the anterior communicating sinus.

The following diagram will serve to illustrate the path of infection.

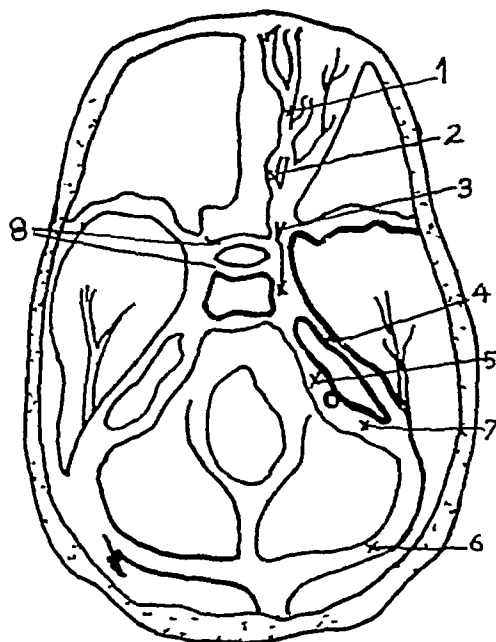
The following is a sketch of a photograph of a dissected specimen, showing the cavernous sinuses, and their connections with each other, forming the so-called circular sinus, at the base of the skull in the anterior fossa.



VO Superior Ophthalmic Vein  
IO Inferior Ophthalmic Vein  
SIC Anterior Intercavernous Sinus  
L Position of Pituitary Body  
E Emissary Vein leading thru foramen ovale into pterygoid plexus  
SPI Inferior Petrosal Sinus

(From Journal of A. M. A., 57 1058 1059 Oct 2 19 6)

The following shows the sinuses at the base of the skull. Note particularly the cavernous and circular sinuses, their connection through the petrosals by means of which infection through the cavernous sinuses may travel to the general circulation by way of the jugular bulb.



1 Superior Ophthalmic Vein  
2 Inferior Ophthalmic Vein  
3 Cavernous Sinus  
4 Superior Petrosal Sinus  
5 Inferior Petrosal Sinus  
6 and 7 Transverse Sinus  
8 Circular Sinus

(From Grey's Anatomy p 621)

(From Grey's Anatomy 15th Edition p 651)

## CONCLUSIONS

1. Cavernous sinus infection of nasal origin is a rare disease. It is fatal in 98% of the cases in which it is found, the only chance of cure being in early diagnosis with drainage. The transorbital route of Dr Mosher is the most feasible. Early ligation of the internal jugular vein on the same side may arrest spread of the infection to the general circulation.
2. Surgery of minor infections about the face, particularly in the danger zones indicated, is bad practice unless frank pus is very evident, then the smallest incision possible for adequate drainage should be made.
3. In the management of the case reported we regret that there was not an earlier diagnosis made, and that it was treated as a straight facial erysipelas for the first three days of observation. It is unfortunate that fundus, spinal fluid and complete blood examination were not made.

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## THE MORTALITY IN SOME OF THE COMMON SURGICAL CONDITIONS

BY A. MURAT WILLIS, M.D., F.A.C.S.\*

IN a paper presented before the American College of Surgeons at the Philadelphia meeting in 1925, attention was called to the increasing deaths from a number of important surgical conditions. Last year, Dr. A. W. Marsh questioned the conclusions of this paper as regards the mortality rate from appendicitis, contending that the increase was only apparent and resulted from greater diagnostic skill on the part of the modern physician. He pointed out that in the city of Worcester, while there had been an increase in the number of deaths ascribed to appendicitis from 2 in 1890 up to 26 in 1924, simultaneously the deaths from "peritonitis" had fallen from 22 in 1890 to 12 in 1924. Taking the mortality rate per 100,000 from these two causes combined, he found that it was 28.5 in 1890 and only 20 in 1924. According to Dr. Marsh, the explanation is obvious, in the earlier days, the cause of many deaths was stated to be "peritonitis", whereas this was actually a secondary factor, the primary one consisting of a diseased appendix, with elevation in the standards of medical education and increasing interest in the accuracy of statistics, the primary cause became recognized in a greater and greater number of cases and, consequently, we see a rise in the number of reported cases of appendicitis and a coincident fall in those of peritonitis.

Further to support his contention, Dr. Marsh presents figures showing the percentage mortality of appendicitis as treated in "a group of New England Hospitals". These figures are somewhat confusing, in his first table dealing with them, he states that the mortality from "acute" (presumably appendicitis) fell from 0.06 per cent in 1905 to 0.018 per cent in 1920. In discussion of the figures, however, he says that they "include all the chronic cases" and a table is then given in which "we exclude the chronic cases". In this latter table, the mortality rate was 0.11 per cent in 1905, falling to 0.035 per cent in 1920.

So far as I am aware, these are the lowest figures heretofore reported and one can scarcely ever hope to better them. However, Dr. Marsh finds that in the Worcester City Hospital the "number of deaths occurring in acute appendicitis is 1%". One can only speculate as to the significance of this, is it 1% of admissions or 1% of the operative cases? Apparently, it refers to a limited number of cases, because we find that the "deaths in acute appendicitis with local abscess or local peritonitis" were 8%, and the deaths from "acute appendicitis with general peritonitis" were 30%. From this, it

would seem the operators of the Worcester City Hospital are obtaining results comparable to those seen elsewhere in the country and falling far short of the scale of achievement manifested in the "dozen hospitals in four New England states".

There can be no question that greater accuracy in diagnosis plays a part in leading to the increased number of deaths ascribed to appendicitis, but how large a part? In a discussion of the rising death rate from appendicitis in a number of cities, Hoffman concludes that "improved diagnosis cannot possibly express the sum total of the increase". It was in 1918 that a determined attempt was made to ascertain the primary cause of death, and it is fair to assume that the results of this campaign had affected the physicians by 1920. Unfortunately, for the present purpose, the Bureau of Vital Statistics no longer takes cognizance of deaths from "peritonitis", consequently, it is impossible to ascertain the relationship which exists in the registration area between appendicitis and peritonitis in recent years. As a matter of fact, Dr. Marsh's figures for Worcester, while supporting his argument when a comparison is made between 1890 and 1924, fail entirely to do so when reference is made to the figures for 1910 in comparison with those of 1924. In 1910, appendicitis was held responsible for a little over 64% of the deaths from this cause and peritonitis combined, 14 years later, appendicitis contributed about 68% of the combined mortality, indicating, therefore, that there had been scarcely any change in the statistical relationship of these two conditions between 1910 and 1924 as regards the City of Worcester. This is quite in harmony with the fact that there has been little increase in our knowledge regarding the pathology and symptomatology of appendicitis in the past ten years, certainly, few additions to our diagnostic methods as applied to this condition have been made since 1920. Therefore, any increase in the number of deaths per 100,000 population in the registration area since 1920 can scarcely be ascribed to greater care in securing reports or to increased diagnostic skill on the part of the physician. There are now available figures including 1925 for the registration area of the United States, and in table 1, are shown the deaths per 100,000 for the years 1920-25 inclusive.

It is obvious that there has been an almost uninterrupted upward trend in the mortality rate from appendicitis since 1920, estimating on the basis of a population of 110,000,000, our failure to maintain the rate existing in 1920 resulted,

\*For record and address of author see "This Week's Issue" page 824

in 1925, to the loss of over eighteen hundred lives

Nor do the figures since 1920 for certain other important surgical conditions appear any more encouraging. In Table 2, the deaths from biliary calculi, disease of the thyroid, and ulcer of the stomach and duodenum are given

TABLE 1  
DEATHS FROM APPENDICITIS PER 100 000

1920	13.4
1921	14.4
1922	14.2
1923	14.8
1924	14.9
1925	15.1

TABLE 2  
DEATHS FROM BILIARY CALCULI, THYROID AND ULCER  
PER 100 000

Year	Condition		
	Bil. Calculi	Thyroid	Ulcer
1920	3.6	0.8	3.6
1921	3.9	2.7	4.9
1922	3.9	2.8	5.1
1923	3.7	2.8	5.3
1924	4.0	3.3	5.6
1925	4.0	4.0	6.0

These are truly astounding figures. In 1920, the death rate from diseases of the thyroid was only 0.8 per hundred thousand, four years later, it had increased *over four hundred per cent*. Expressed in other words, had we maintained the rate of 1920 in 1925, approximately *three thousand lives would have been spared*. Although the percentage increase in the case of ulcer has not been so great as with thyroid disease, the total of deaths from our surgical progress lags only a little behind, "improved" therapy in 1924 has been accompanied by the loss of *over two thousand patients* more than would have succumbed had the 1920 rate been maintained.

Why are more people dying annually from appendicitis? Are causes at work which we can determine and eliminate? It has been suggested that there is an increasing number of cases of appendicitis, an increase so great as to cause a rise in the total number of deaths in spite of a decline in the percentage mortality. It is difficult to conceive of this being the case. As the result of a questionnaire sent to practically every hospital in the state of Virginia it was ascertained that approximately 5,000 cases of appendicitis were operated upon in these institutions during the year 1924, with a mortality of about 6%. If the population of Virginia is placed at two million, the same incidence of appendicitis in the total registration area comprising about one hundred and ten millions would give a total number of cases of

appendicitis of at least two hundred and fifty thousand annually.

In all likelihood, at least two appendices are removed during the course of abdominal operations undertaken for other purposes than are removed in operations solely for the purpose of appendectomy, consequently, we arrive at the astounding total of 750,000 appendices removed annually. If this reasoning is correct, it is obvious that we should be reducing the proportion of susceptible individuals, granting this fact it can scarcely be that the rising death rate is due to a greater incidence of appendicitis.

The more thought devoted to the subject, the more convinced I am that preventable causes exist to explain this rising mortality rate. Again and again in the literature appear papers reporting the excellent results obtained by some particularly brilliant surgeon and creating the impression that by *his* technique and with *his* skill various operative procedures are robbed of all danger for the patient, who, submitting to the scalpel, is enabled to live happily forever afterward. In the discussion of Dr. Marsh's paper there was evidenced a complete failure to grasp the significance of my earlier contentions, no one believes for a moment that the mortality rate for appendicitis in the hands of any individual operator is mounting from year to year, quite the contrary, and I am only too willing to agree with the gentleman from Burlington or elsewhere that *he* is losing fewer and fewer cases of appendicitis in proportion to the increase in his technical skill and more especially, his surgical judgment. But it is just this attitude of complacency that exercises a pernicious influence on the younger men, as a result of their reading or the instruction they receive in medical school or hospital, they come to consider appendicitis a simple matter and the problem merely an *operative* one, and it is only after an experience gained at the cost of valuable lives that they learn it is far otherwise, because upon the surgeon's ability to judge properly the indications for immediate operation or delay may depend the outcome of the case.

The confusion that exists in the mind of the student or young operator is readily understood when one reads such statements as this: "When it comes to the later case, there seem to be two methods of handling it. One by immediate operation, the other, the conservative method." I have yet to learn that either one or the other has shown such preponderant superior success that it can convince everyone that it is the best. And on the same page "It is in this class of cases which Ochsner describes as too late for the early operation and too early for the late operation where I think the judgment and experience of the surgeon counts for a good deal." Why should it count? If the author quoted believes that immediate

operation will give as good results in these late cases as will delay, the inexperienced man (and, alas, there are far too many), may adopt the rule of *immediate operation in every case*, and I need only refer to the figures of Gatch, following this procedure, as compared with those of Ochsner, employing the conservative method.

Two serious faults exist in our teaching regarding the treatment of appendicitis, in the first place, emphasis is laid on the simplicity of operation, in the second place, too often the problem is made to appear as merely an operative one.

The rising death rate from biliary calculi, thyroid disease and ulcer likewise may be attributed to over-enthusiasm on the part of surgeons. A tendency arises to regard every pathological condition as an indication for immediate surgical intervention, in some clinics, the most varied symptomatology is taken as indicative of disease of the gall-bladder, and the optimistic reports as to "cure" from surgical treatment in this and other pathological conditions leads less skilful surgeons to attempt duplication of these marvelous results. It is a matter of some significance that the death rate from ulcer has increased *pari passu* with increase in the tendency toward more and more radical procedures, first, the negation as to any value of medical treatment, with the advocacy of gastro-enterostomy, then discontent with this relatively conservative surgical method and the substitution

by many of the much more radical gastrectomy. It is not that gastro-enterostomy or even gastrectomy carries an excessive mortality in properly selected cases and in the hands of skilled surgeons, but it is the example of these leaders and the influence of their written and spoken word that leads poorly fitted operators to attempt duplication of their feats.

With cholecystitis, emphasis has been placed recently on one fruitful cause for unfortunate results following operation, namely, the existence of cardiac involvement in the patient. Cholecystitis is prone to occur in just the type of patient in whom is encountered myocardial involvement, the middle-aged or elderly, obese individual, often with some focus of infection. Indeed, a symptomatology so closely resembling biliary colic may be encountered in some of these cardiac patients as to render correct diagnosis of the utmost difficulty, and unless the greatest caution is exercised, laparotomy may be performed because of epigastric pain, rigidity of the abdominal muscles, fever, and leucocytosis, only to disclose a normal gall-bladder and to be followed by a fatal outcome. It is not generally recognized by surgeons that anginal attacks may be accompanied by pain referred to the epigastrium and it has been my experience that some of these patients may show delayed filling of the gall-bladder in the absence of obvious disease of this organ.

## VINCENT'S INFECTION

### Report of an Apparent Outbreak at Smith College

BY KATHFRINE PARDEE, M.D., FAITH FAIRFIELD GORDON, M.D., AND CATHERYN RILEY, M.D.\*

**D**URING the twenty-three days of March preceding the 1927 spring vacation, we examined smears from the gums or throats of 462 of the Smith College students. Of these 139 were found to show numerous fusiform bacilli and spirilla. Mild but definite clinical involvement was manifest in 113 of these, while only two (one of these the first of the series), developed all the typical symptoms of Vincent's angina.

Our purpose in reporting these cases is not to offer any conclusions, but merely to analyze them and the various factors apparently involved. We do this because we found the published information on the subject of Vincent's infection often inconsistent and inconclusive. The general prevalence of the condition, the existence of carriers, the degree of contagion, and the influence of poor mouth hygiene and smoking are the particular factors on which it was thought further information would be desirable.

On February 25th, 1927, a student, H. N., developed a typical case of Vincent's angina,

including a general involvement of the gums, a good deal of inflammation of both tonsils, and enlarged cervical glands. There was a slight rise in temperature and pulse associated with this, and the student felt sick. A smear from the throat confirmed the diagnosis.

On March 2d, her roommate, E. R., went to a local dentist because of mild gum symptoms. A smear at our office showed large numbers of fusiform bacilli and spirilla. Her symptoms were typical of the cases which followed. These consisted of slight redness and puffiness of the gums, usually about a few teeth only, frequently the outer aspects of the lower incisors. In a very few instances there were beginning ulcerations. During her roommate's absence at the infirmary E. R. roomed with a third girl, M. C. This girl came to the office for examination, but her smear was negative.

On March 3d, twenty girls came for observation. Smears from the gums were positive in five. M. C. was examined again and this time the organisms were found.

On March 4th, nineteen more students were seen for the first time. Of these three harbored

\*For records and addresses of authors see "This Week's Issue" page 824.

the organisms. One student, seen the day before, now had a positive smear. One student definitely exposed to E R had fusiform bacilli but no spirilla.

All but one student seen on these three days ate in the same dormitory dining-room. We therefore supposed that we were dealing with a house infection. But beginning March 5th students came in from other dormitories and we found the condition widespread. The students from whom smears were taken were those who came voluntarily to the office for examination because they thought they had symptoms or believed themselves exposed.

Smears were taken from the mouth only, except in a few cases in which a throat smear seemed indicated. All smears were taken with an ordinary cotton stick applicator. This method was reasonably satisfactory, although a few cases called negative were found to be positive when a smear was obtained by dental technique. We used a carbol-fuchsin stain, considering positive only those smears showing both fusiform bacilli and spirilla.

Treatment was in the hands of the local dentists and consisted of daily applications of

den and marked drop in the number examined after March 11th may be explained by the fact that we stopped taking smears from those who showed no clinical evidence of infection. By March 19th, students were beginning to leave for the spring vacation. Because of these factors we hesitate to interpret our curve as representing that of a true epidemic. However, the fact that only 4 or 5 students showed any symptoms during the spring term is suggestive.

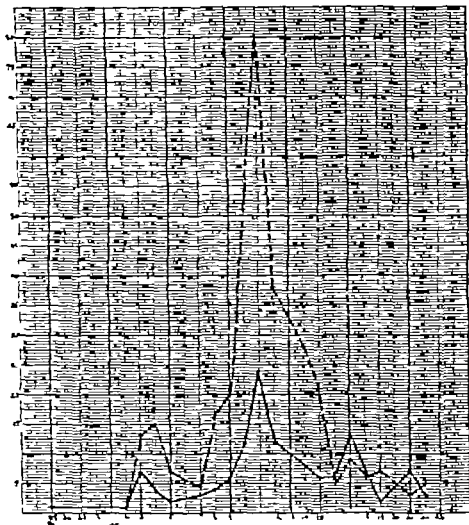


FIGURE A Relationship between the number of negative and positive smears between Feb. 25 and March 23. Solid line positive smears; broken line negative smears.

chromic acid and a mouth wash. Our criterion for discharge was a negative smear on two successive days.

In the 139 cases with positive smears the clinical condition was noted as characteristic or suspicious in 91, or 65%. In only 10 of these did the throat alone show signs of infection. In 25 instances, or 18%, the gums were noted as normal. The remaining 22 were first examined by a local dentist, who reported them characteristic.

Figure A shows the number of students examined for the infection each day. The sud-

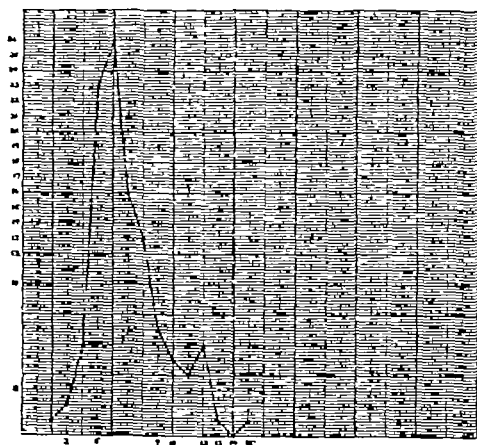


FIGURE B Length of time required for treatment. Vertical line represents number of cases; horizontal line days. 61% or 87 cases were cleared by the 5th day.

The length of time required for treatment varied from two days to more than two weeks. However, as Figure B shows, 87 cases, or 61%, were cleared by the 8th day. In 24 cases, or 17%, more than 8 days were necessary, and 14 cases had not recovered by the spring vacation.

That our proportion of positives, even in a time of unusual prevalence, was below that reported by Campbell and Dyas<sup>1</sup> and Clewer<sup>2</sup> is probably ascribable to the fact that we were dealing with a group of girls in whom good oral hygiene was the universal rule. Our small proportion of carriers, only 18% having the organisms but no symptoms, may also be attributable to this circumstance.

The influence of smoking on the susceptibility to Vincent's infection was also considered. As an arbitrary division we classified as moderate smokers those students who smoked 6, 8, or more, cigarettes daily. Those who smoked less we considered occasional smokers. The data is shown in Figure C. Our information was inconclusive because we did not get the information from all the students. In our group of students moderate and occasional smoking had no apparent significance. However, the dentists noted that heavy smoking continued during the treatment delayed the cure.

#### SUMMARY

1. In a group of 462 students, 139 were found to have Vincent's organisms in their mouths or throats.



- 2 Of these 82% showed mild redness and puffiness of their gums, or inflamed throats
- 3 The majority of cases were cleared by the 8th day of treatment
- 4 Moderate smoking apparently did not in-

fluence the incidence of the disease but possibly delayed cure

5 Good oral hygiene seemed the most important factor in decreasing susceptibility

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2 J Roy Army Med Corps London 1923 XL 485 490

	Smokers						Non-smokers	
	Moderate		Occasional		Total			
	No.	%	No.	%	No.	%	No	%
Neg.	19	13.3	75	52.4	94	66	112	70
Pos.	10	7	39	27	49	34	49	30
Total	29	20.3	114	79.4	143	100	161	100

FIGURE C Influence of smoking on Vincent's Infection. The relative proportions of smokers and non smokers were similar in the negative and positive groups

## MEDICAL PROGRESS

### PROGRESS IN SYPHILIS, 1927

BY AUSTIN W. CHEEVER, M.D.\*

THERE has been about the usual number of articles on syphilis during the past year but they show practically no advance from the therapeutic point of view since bismuth has been accepted and placed as to its value, as also tryparsamide and malarial therapy. There has been some experimental work along the lines of fever therapy using other means than malaria, while Hinton's glycerol-cholesterol precipitation test has been a distinct contribution to the field of serology, tissue-transfer as a criterion of cure which has been recognized in experimental work for some time, is now advised in the human subject.

#### ORIGIN OF SYPHILIS

Scholars have expended much learned labor in the endeavor to find descriptions of syphilis among ancient writings, but they have not found enough to be convincing. About 1500, however, there began to be many unquestionable references to the disease showing conclusively that it was at that time of very recent appearance in Europe. It has aroused interest outside the medical profession and John P. Rice, Professor of Romance Languages, University of Buffalo, has collaborated with Herbert U. Williams, M.D. and Joseph Renato Lacayo, M.D. (*Arch Dermat & Syph* 16 683, December, 1927) in collecting citations from numerous early Spanish writing, some of which had never before been translated into English, supporting the American origin of syphilis.

#### RESEARCH

The first experimental study of the effect of elevation of body temperature on syphilis seems to have been made in 1919 by Weichbrodt and Jahnel (*Deutsche med Wchnschr* 45 483, 1919) who exposed rabbits with scrotal chancres to an incubator temperature of 105.8 F (41 C) for thirty minutes twice daily for several consecutive days. The chancres gradually involuted to complete healing in from three to five weeks. In a previous communication Schamberg and Rule (*Arch Dermat & Syph* 14 243, September, 1926) showed that by hot baths rabbits could be prevented from developing the disease after experimental inoculation. In the present study the same authors (*J A M A* 88 1217, April 16, 1927) applied baths subsequent to the development of chancres. In those rabbits which were thus treated the chancres disappeared as rapidly as occurs after the use of arsphenamine, whereas the untreated

controls progressed in the usual manner. Tissue-transfer using popliteal and inguinal glands was negative in the animals which had been given the baths. Frazier (*Arch Dermat & Syph* 16 445, October, 1927) continued these investigations and found that rectal temperatures from 106.2 to 110.6 F induced in rabbits by bathing in water at 113 F for fifteen minutes at intervals of from twenty-four to forty-eight hours resulted in definite inhibition in the clinical progress of the disease in three animals inoculated with virulent syphilitic virus four days before the institution of the first of ten baths, and in the complete suppression of the infection in one of these animals. Three control animals identically inoculated but not bathed developed local syphilitic lesions within the usual period, and later two of them showed metastatic lesions of the un inoculated testis. It was found that raising the body temperature from 103.3 to 106.7 F by bathing the rabbits in water at 107.6 F for twenty minutes had no significant effect on the disease.

Schamberg and Tseng (*Am J Syph* 11 337, July, 1927) report their results of hot baths in human patients with syphilis, safely raising the body temperature in some cases as high as 106 F. There was a perceptible improvement in the cutaneous manifestations sometimes to the point of disappearance and there seemed, also, to be a slight improvement in the Wassermann reaction. After a series of very hot baths they found a transient leucocytosis followed by a brief reduction in the white cells, as well as a temporary slight rise in systolic blood pressure and frequently a great drop in the diastolic pressure, also temporary, a fall in the blood cholesterol averaging about 10 per cent, the same percentage of rise in the blood sugar, while the urea nitrogen, blood uric acid, proteolytic and lipolytic enzymes were not influenced.

Wagner and Brienl (*Klin Wchnschr* 6 805 April 23, 1927) used Rocky Mountain spotted fever in rabbits previously infected with syphilis. The fever caused a rise in temperature to from 40 to 41 C, lasting one week and exerted a curative influence on the syphilitic infection.

Accidental reinfection was at one time considered a satisfactory proof that the person developing the reinfection had been cured of his first attack, gradually the validity of this assumption has been questioned and Chesnev Halley, and Kemp (*J Exper Med* 46 223, Aug 1 1927) found that syphilitic rabbits, whether treated or untreated, after the ninetieth day of infection were more refractory to subsequent in-

oculation with the homologous strains of *Spirocheta pallida* than to inoculation with heterologous strains. The resistance which develops in rabbits during the course of a syphilitic infection appears, therefore, to be strain-specific rather than species-specific.

The application of the tissue-transfer method, familiar to those who follow experimental work, to the study of the problem of the curability of syphilis in the human being has been made by Chesney and Kemp (*J A M A* 88 905, Mar 19, 1927) who report on the results of intratesticular inoculation of rabbits with patients' lymph nodes removed before and after treatment. After their use of this test in three patients they do not maintain that negative lymph node transfers are proof of the cure of syphilis, but conclude that "this method offers a means of studying the curability of the disease, and that valuable information will be derived when a large experience with it has been gathered."

The value of sodium thiosulphate in relieving patients with heavy metal poisoning has been reported by many as giving brilliant results while some others find it of little value. Voegtlin and Dyer (*Pub Health Rep* 42 1045, April 15, 1927) experimented with this drug to determine whether it might not be of value in preventing toxic manifestations following intensive treatment with arsphenamines. They found that large doses of sodium thiosulphate did not decrease the trypanocidal efficiency of arsphenamine, neoarsphenamine, or sulpharsphenamine, nor did they exert a deleterious effect on the spirocheticidal action of sulpharsphenamine. On the other hand Haag and Bond (*J A M A* 88 1219, April 16, 1927), after experimental work on dogs, state that their findings convince them that sodium thiosulphate is absolutely valueless against poisoning produced by the oral administration of the solution of potassium arsenite.

In the past a few articles have appeared suggesting the use of actinotherapy, generally in the form of ultraviolet light, in syphilis, reasoning that since light therapy has been of such value in tuberculosis it should be in syphilis, also a chronic, generalized disease. Brown and Pearce (*J Exper Med* 45 497, 1927) carried out a series of experiments to determine the reaction of rabbits inoculated with syphilis to their light environment. The conditions compared were diffuse sunlight through ordinary window glass, constant and continuous exposure to artificial light with a wave length of from 3022 to 5790 Angstrom units, and complete exclusion of light. These tests showed that the efficiency of the reaction to infection increases with the amount of light received and with the constancy of exposure to it.

Rosen and Krasnow (*Arch Dermat & Syph* 16 16, July, 1927) studied the blood sugar content of 120 syphilitic patients, and found that 68 per cent of these cases showed a sugar

content within the range of from 70 to 100 mg per hundred cubic centimeters of whole blood, 9 per cent, a value below 70 mg, and 23 per cent, above 100 mg per hundred cubic centimeters. Patients who showed a low or high blood sugar content when on an unrestricted diet did not always give a corresponding value when fasting.

At the 1926 meeting of the Italian Society of Dermatology and Syphilology in Rome, Rosellini, Lombardo, and Pasini (*Arch Dermat & Syph* 15 604, May, 1927) announced that their experimental attempts at inoculating llamas with syphilis were all negative. Thus they appear to have positively discredited the vague reports, which have never been substantiated, of experimental syphilis in the llama even in one case with the alleged production of some sort of immune bodies which could be used in human syphilis.

#### SERODIAGNOSIS

A notable contribution to the field of serology has been made by Hinton who has given us a new precipitation test in his glycerol cholesterol reaction. He reports (*B M S J* 196 993, June 16, 1927) a new, simple, easily read, sensitive, serum test, apparently possessing greater clinical value and requiring less labor and materials than the Wassermann as shown by comparative study of 506 consecutive routine cases. The outstanding facts are "First, of 138 cases of clinical syphilis the glycerol cholesterol reaction was positive in 113 instances, whereas the Wassermann reaction was positive only in 61, secondly, that of 365 cases without clinical evidence of syphilis there was not a single positive glycerol-cholesterol reaction. This included 195 specimens from pregnant women. Furthermore, in the positive group there was one case of primary syphilis of nine days' duration and another of three weeks' duration, the Wassermann reaction was also positive in both of these cases. In three of the cases where the Wassermann reaction was negative in the blood and spinal fluid as well, the glycerol-cholesterol reaction was positive. An important point bearing on false positives by the Wassermann test is shown in the two cases where the Wassermann was positive and the glycerol-cholesterol reaction negative. In both these instances a very careful clinical examination failed to disclose any evidence of syphilis. Moreover, in those cases in which the Wassermann reaction was negative or doubtful and the glycerol-cholesterol reaction positive, the glycerol-cholesterol test showed itself to be a more delicate reaction and presumably a more reliable test than the Wassermann in giving indication of the inadequacy of treatment."

Kline and Young (*Am J Syph* 11 290, April, 1927) present a second communication (the first having appeared in the *J A M A* 86 928, March 27, 1926) on their slide precipi-

tation test for syphilis, showing further simplifications and improvements. They feel that the test is as specific as the Kahn and Wassermann tests and has the advantage over these methods in that it is much simpler and requires much less apparatus and serum.

There has been a wealth of material written on serologic tests, both from the laboratory and the clinical points of view. The trend of the opinions expressed in this literature seems to be to replace the Wassermann test by precipitation tests, the best known of which is the Kahn or in some cases to retain the two for the sake of comparison. Hopkins and Brunet (*J A M A* 88 311, Jan 29, 1927) show that the later technic of the Kahn test is superior to the earlier and that its advantages lie in its simplicity of procedure (reducing labor and expense and eliminating possible sources of technical error), in rapidity of obtaining reports in its usefulness with anticomplementary sera, and in its ability to reveal reactions in some cases in which the Wassermann is negative or doubtful. The authors decide that the Kahn is a little more sensitive than the Wassermann in primary syphilis and more persistently positive in many treated cases.

S. William Becker (*Am J Syph* 11 131, January, 1927) does not find that the Kahn test replaces the Kolmer modification of the Wassermann. Both should be performed, he thinks in order to obtain the utmost in serologic diagnosis. The Kahn gives more uniform results in repeated examinations and is more difficult to reverse from positive to negative by treatment, in his opinion.

In a comparative study of the Kahn and Wassermann tests in a little over 15,000 examinations Berry, Ev, and DeLong (*J A M A* 88 1906, April 23, 1927) found complete agreement between the two methods in 89.13 per cent of the cases, in 6.54 per cent relative agreement and in 4.32 per cent disagreement. Their conclusion is that both tests give a high degree of specificity and on the basis of their observations it is planned to use both in a routine manner in the laboratories of the Ohio Department of Health.

#### NEUROSYPHILIS

Kerlin (*Am J Syph* 11 276, April, 1927) stresses what should by now be almost axiomatic: the need of routine spinal fluid examination in syphilis.

Vills (*Brit M J* 2 527, Sept 24, 1927) also urges routine examination of cerebrospinal fluid because it is essential in the management of syphilis. He reports that pathologic spinal fluid was found in seven out of 147 patients with primary syphilis and negative Wassermann reaction, in 18 out of 136 primary cases with positive Wassermann reaction, in 178 out of 559 untreated secondary cases, in 69 out of 147 previously treated relapsing cases of a second

ary nature. Of 330 tertiary cases exhibiting gummatous lesions, 106 showed abnormal cerebrospinal fluid, of 133 patients with positive Wassermann reactions in whom no active gummatous processes could be discovered, 41 had pathologic spinal fluid. Of a total number of 87 congenitally syphilitic adults examined, 23 were found to have abnormal cerebrospinal fluid.

A case of tabes in a young woman who had normal reactions in the cerebrospinal fluid during the early secondary stage six years previous was reported by Banchieri (*Policlinico* 34 350, Mar 7, 1927).

Becker (*Am J Syph* 11 37, January, 1927) made a careful study of the sugar and chloride content of the cerebrospinal fluid in cases of neurosyphilis. He found the chloride content normal in his cases, but the sugar content too variable to be of definite aid in prognosis. Though his observations covered a year and a half, he decided that it would require study over a period of years to give data of value.

Bunker and Meyers (*J Lab & Clin Med* 12 415, 1927) report that the incidence of the traditional four isoagglutinin groups was found to be the same in a series of 91 patients with general paralysis as in the population at large. Since this is also true of syphilitics, general paralytics do not differ from syphilitics in this respect.

The malarial treatment of neurosyphilis is gradually finding its place as is also tryparsamide. O'Leary (*J A M A* 89 95, July 9, 1927) says that the treatment of neurosyphilis by malaria is of definite value, 49 per cent of paretics remaining for a considerable time in remission. Some serologically negative cases of tabes with the lightning pains or gastric crises materially improved, some cases of optic atrophy were benefited. The mortality was about 5 per cent. The earlier the treatment was instituted, the better were the results. Goldsmith and Rockwood (*Am J Syph* 11 165, April, 1927) report some interesting cases following the use of malaria in paresis. Their results are fully as encouraging as the usual reports and indicate at least favorable remissions in from 38 to 50 per cent of cases. They conclude that this mode of treatment is a valuable adjunct in the care of neurosyphilis and they recommend it for adoption by hospitals and clinics dealing with such cases. Schamberg and Greenbaum (*Atlantic M J* 30 554, 1927) found the malarial treatment of syphilis of definite value in certain forms of neurosyphilis, particularly paresis. The results are best in early cases. Twenty-eight per cent of their paretics became clinically normal by this method and those with sensory disturbances were distinctly improved. Optic neuritis, however, was not influenced.

Schwab and Cadv (*Am J Syph* 11 9, January, 1927) found 68 per cent of their group of

paretic patients capable of being kept of a syphilitic infection which develops following the use of tryparsamide. In about 10 per cent of patients the condition was arrested or improved clinically. The authors feel that the results with tryparsamide are better than with malaria. Hadden and Wilson (*J A M A* 88 473, Feb 12, 1927) offer definite evidence of great improvement in the physical state of patients in about 40 per cent of cases treated with tryparsamide, and they consider the drug superior to any other used in the treatment of general paresis.

In order to avoid subjecting a patient to actual infection as occurs in the use of malaria, relapsing fever, sodoku, and the like, Sicard (*Paris Letter, J A M A* 89 1979, Dec 31, 1927) has recently induced high temperatures in patients with general paralysis by intravenous injections of a culture of Ducrey's bacillus, which he calls "dmeleos" and which constitutes an effective vaccine in the treatment of simple or soft chancre. The injection is followed by a severe chill and then a rise in temperature to 39.5, 40, and 40.5 C. After a profuse sweat, the patient returns to a normal temperature. Experience has shown that this treatment repeated every two days until several dozen injections have been given, has never been followed by any untoward effect such as albuminuria or azotemia. Prof. Sicard and his associates, Haguenau and Wallich, have brought about ameliorations and long remissions in patients with general paralysis whom they have thus treated. Kunde, Hall, and Geity (*J A M A* 89 1304, Oct 15, 1927) in order to accomplish the same object used typhoid combined vaccine in courses of from eighteen to twenty-three injections, administered every second or third day, sufficient in quantity to produce a chill followed by fever of 103-104 F rectally. The initial dose consisted of fifty million dead bacilli. After two months' interval a second course of treatments may be given, the initial dosage reduced to the original initial amount. In 49 unselected cases thus treated, 21 had good remissions and were restored to their former social conditions or occupations, of the eight who are dead, one died of pneumonia, one of suicide because of family difficulties, one of a complicating delirium tremens, one of cerebral symptoms, and the remaining four who were rapidly deteriorating before treatment was begun were not influenced by it. The authors do not advocate the use of this vaccine treatment in moribund patients.

#### TREATMENT

Lipskeroff and Grebin (*Arch Dermat & Syph* 16 442, October, 1927) studied a considerable number of different methods of giving water in an attempt to cause the most promising calcium chloride have

content within the range of from 70 to 100 mg per hundred cubic centimeters of whole blood, 9 per cent, a value below 70 mg, and 23 per cent, above 100 mg per hundred cubic centimeters. Patients who showed a low or high blood sugar content when on an unrestricted diet did not always give a corresponding value when fasting.

At the 1926 meeting of the Italian Society of Dermatology and Syphilology in Rome, Rosellini, Lombardo, and Pasini (*Arch Dermat & Syph* 15 604, May, 1927) announced that their experimental attempts at inoculating llamas with syphilis were all negative. Thus they appear to have positively discredited the vague reports, which have never been substantiated, of experimental syphilis in the llama even in one treatment with other bodies which could be used in human.

#### SERODIAGNOSIS

In showing that bismuth arsphenamine is well borne in adult dogs five years of age in that bismuth arsphenamine is a promise of being valuable in the treatment of late syphilis by the simplification of the treatment of (B M S J 196 993, Wright (*Am J M Sc* 173 23, 1927) tells of a method of using

neoisphenamine which he considers less labor and material satisfactory in early and latent cases of syphilis than the Wassermann reaction. First, of 138 cases negative in an average of six weeks, the cholesterol reaction remained so. Wright bases his report on 10 cases, whereas the in which bismuth was used intramuscularly only in 61, showing courses of neoisphenamine or in combination with neoisphenamine, one injection each drug every week.

Gruhzit, Tendick, and Sultzberger (*Am J Syph* 11 87, January, 1927) made estimates of the rates of absorption of three insoluble bismuth preparations: salicylate, potassium tartrate, and oleate. This was determined by giving injections to dogs and by making chemical analyses of muscles containing the injected material at autopsies performed at varying intervals. It was found that salicylate was most readily absorbed, potassium tartrate less, and oleate least of all. These conclusions should be compared with those formed from the roentgenologic studies of Cole, Farmer, and Miskdjian who found the bismuth potassium tartrate more readily absorbed than the salicylate.

Gruhzit and Sultzberger (*Am J Syph* 11 103, January, 1927) report studies in dogs, similar to the above, with the use of a soluble bismuth salt, sodium bismuth thioglycollate. They found absorption very rapid. The drug seemed to be deposited in higher concentration in bone, kidneys, and spleen than elsewhere, and appeared to be stored in bone. About 65 per cent of the eliminated bismuth was found in the urine, about 35 per cent in the feces, as compared with 80 and 20 per cent respectively in the case of insoluble bismuth salicylate. The peak of elimination with a soluble salt was

tation test for syphilis, showing further simplifications and improvements. They feel that the test is as specific as the Kahn and Wassermann tests and has the advantage over these methods in that it is much simpler and requires much less apparatus and serum.

There has been a wealth of material written on serologic tests, both from the laboratory and the clinical points of view. The trend of opinions expressed in this literature has been to replace the Wassermann test by simpler and more reliable tests, the best known of which is the Venereal Disease Research Laboratory (VDRL) test. However, the technique of the Kahn test is still the effect on the procedure (reducing the time and the cost of obtaining results with anticonglutination). *Dermat & Syph* 15 695.

ability to reveal two families with syphilis. The Wassermann reaction, to the third generation, authors decide contradictory opinions of Four-sensitization that transmission to the third generation, and Hutchinson, who from a wide treated case felt that it does not and the paucity

S. Wilre on the subject, the author feels that January 1927 syphilis may be passed on to test reagent and even fourth generation, though no Wassermann been reported where it has been passed

anation the third Smith (*Arch Dermat. gnumma* 15 527, May 1927) has given a very broad survey of 1000 cases of congenital syphilis seen since 1914 at the Massachusetts General Hospital. McCord (*J A M A* 88 626, Feb 26, 1927) studied 243 fetal autopsies, of which only 50 babies were born alive. Syphilis was determined as the cause of death in 57 per cent of these cases. The bone lesion known as Wegner's disease appears pathognomonic, lungs, kidneys and liver seem to be the tissues most frequently involved.

#### ULCUS VULVAE ACUTUM

While not specific this condition should be called to general attention as it may arise as a differential diagnostic problem. Stricker (*Arch Dermat & Syph* 15 54 January 1927) reports a case from St. Louis which is probably the second to be reported in American literature though not unusual in Europe. There suddenly appeared on the labia and surrounding skin ulcers from 3 to 7 mm in diameter, irregularly shaped with an inflamed areola about which the sides were sloping and the edges undermined. The bases were depressed and covered by a white necrotic membrane. They were tender to touch and pressure otherwise not uncomfortable. Bacilli resembling *Bacillus carssus* were found in large numbers but were not cultured as the lesions healed before media could be obtained.

## THE MASSACHUSETTS TUBERCULOSIS LEAGUE

ONE hundred and fifty members and friends of the Massachusetts Tuberculosis League were present at the Annual Meeting held at Hotel Kimball, Springfield, on April 30th. From the twenty-eight Affiliated Organizations of the League, officers, members, and workers participated in the sessions which were held in the morning and at luncheon at the Hotel and a visit to Westfield State Sanatorium in the afternoon. Dr Kendall Emerson, President of the League, presided at the sessions.

Dr William Charles White of the United States Public Health Service was the speaker at the morning session, his topic being "The Responsibility and Future of Tuberculosis Research in the United States."

Mr George J Nelbach, Executive Secretary of the New York State Tuberculosis and Public Health Committee of the State Charities Aid Association, was the speaker at the luncheon meeting, his topic being "Fundamentals and Other Things in the Tuberculosis Association's Program."

Dr John M Birnie, President of the Massachusetts Medical Society, brought the greeting of the State Society to the Annual Meeting. Dr Birnie spoke on the importance of close coordination of effort on the part of the public health authorities, the medical profession, and the volunteer agencies.

Dr George H Bigelow, State Commissioner of Public Health, brought the greetings of the State authorities.

Dr S L Skvirsky, on behalf of the Nominating Committee, presented the names of the nominations for election of Directors, Officers, and members of the Executive Committee.

*For Honorary President* Edward O Otis, M D

*For President* Kendall Emerson, M D

*For Honorary Vice-Presidents* George H Bigelow, M D, Vincent Y Bowditch, M D, Rt Rev William T Lawrence, D D, Rabbi Harry Levi, William Cardinal O'Connell

*For Vice-President* Frederick T Lord, M D

*For Treasurer* Mr Arthur Drinkwater

*For Assistant Treasurer* Mr Romney Spring  
*Clerk of the Corporation* Mr Frank Kiernan

*Executive Committee*

Dr Roger I Lee (to succeed himself) to serve for three years

Dr Walter P Bowers (to succeed himself) to serve for three years

Dr Nahum R Pillsbury to succeed Dr Adam S MacKnight, deceased. Term to expire April, 1929

### *Directors*

Mr Sydney Ashe  
Mr Walter S Barr  
George H Bigelow, M D  
Vincent Y Bowditch, M D  
Walter P Bowers, M D  
Mrs B Milo Burke  
Robert Carpenter, M D  
Henry D Chadwick, M D  
I J Clarke, M D  
Gardner N Cobb, M D  
Miss Josephine B Colt  
Francis G Curtis, M D  
Hilbert F Day, M D  
Francis P Denny, M D  
J Frank Donaldson, M D  
Mr Arthur Drinkwater  
Edward H Ellis, M D  
Mrs Bessie Ellson  
Kendall Emerson, M D  
Mrs Carolyn M Engler  
Cleaveland Floyd, M D  
Harold A Gale, M D  
Mr William B Geoghegan  
Mr George H Gilbert  
Mr William N Goodell  
Mrs E Frank Guild  
John B Hawes, 2nd, M D  
Mrs John D Henry  
William O Hewitt, M D  
George S Hill, M D  
Samuel Hoberman, M D  
Mr Charles H Hobson  
Mr Clifton H Hobson  
Mr C E Hodgkins  
Prof Murray P Horwood  
George P Hunt, M D  
Mr Arthur Kendrick  
Roger I Lee, M D  
John H Lindsey, M D  
Frederick T Lord, M D  
Carl C MacCorison, M D  
Richard P MacKnight, M D  
Mrs T Joseph McAuliffe  
Rev J F McGillicuddy  
Mrs Frances B Mowry  
Edward O Otis, M D  
Olin S Pettingill, M D  
Nahum R Pillsbury, M D  
Miss Clementine Platt, R N  
Sumner H Remick, M D  
Mr John Ritchie  
J Holbrook Shaw, M D  
Miss Allan R Shepard  
Solomon Skvirsky, M D  
Mrs Mabel Greeley Smith  
Mr Edmund H Talbot  
Harry S Wagner, M D  
Roy J Ward, M D  
Miss Margaret Weir

Rev Charles P Wellman  
Mrs Josephine White  
Mrs Reginald Heber White  
Mr Raymond S Wilkins  
John M Wise, M.D  
Mr Arthur V Woodworth  
These were elected unanimously

The report of the Treasurer, Arthur Drinkwater, Esq., for the last fiscal year, as audited by Certified Public Accountants, was read and received

Following this meeting a visit was made to the State Sanatorium for Children at Westfield Dr Henry D Chadwick Superintendent, spoke on the importance of examination of contacts in families where someone has had tuberculosis He presented a number of children who are patients at the Sanatorium and showed X-ray films of the improvement of their conditions from the time of admission to the present

A vote of thanks by the League was extended to the Hampden County Tuberculosis and Public Health Association and the Springfield Chamber of Commerce for their cooperation in making the meeting a success

## PRESIDENT'S REPORT—1927-1928

KENDALL EMERSON, M.D., F.A.C.S.\*

HAPPY that nation whose annals are brief! It is "wars and rumors of war" which make up the bulk of history During the past twelve-month the Massachusetts Tuberculosis League has been peculiarly free from strife Offensive or defensive warfare, both have been at low ebb, and internecine hostilities have been confined to the merest skirmishes

We are concluding the fourteenth year of our work as a State League The present active association is the fruit of all these years, its prosperity has not been bought without paying the price of development, we are not unacquainted with growing pains, some of them severe But from the hard lessons of experience we have learned much as to method of operation, economy and efficiency, and it is not without justifiable hope that we look forward to a long season of continued service to the community which has given us its generous support

Physically the League Headquarters is still housed in the crowded but comfortable offices in the Little Building where we welcome frequent visits from the local Secretaries throughout the State and where we would fain see other friends of the organization oftener and in larger numbers Our Executive Secretary still reigns there with his accustomed vigor and tact and the smooth running of the machinery of the State work is largely due to his exceptional lubricating power That sly thief, Matrimony,

has stepped in to rob the office of our much beloved Educational Secretary She has fought faithfully the hard fight to instill health education into an apathetic public and she has won consistent victories The League bids her God-speed and hopes for her victories no less conspicuous on her future battleground We have been most fortunate in securing as her successor Miss Jean V Latimer, who is admirably equipped to carry on this vital part of our work In the opinion of your President the office is too meagerly staffed The really enormous volume of work accomplished by devotion to duty on the part of these faithful people is a source of constant amazement to me and it is quite to the point that I call your attention to the unusual fidelity of the service they are rendering the League

The Executive Committee has held its regular bi-monthly meetings throughout the year Several changes have taken place in its personnel In the death of Dr Adam S MacKnight the League has lost a friend of very long standing and one whose counsels will be grievously missed His was a life long service in the anti-tuberculosis cause and he has left a gap in the ranks not easy to fill Mr Sydney Ashe of Pittsfield resigned from the Committee because of press of work in connection with his exacting business His interest remains strong and the League can always count on him for special service in the western part of the State Rev Charles P Wellman, President of the Franklin County Public Health Association, has been chosen to succeed Mr Ashe and has already served at several of our meetings

It is not my duty to lay before you in detail the work of the League during the past year That you will hear in later reports Suffice it to say that we have prospered reasonably The Seal Sale went over the top and we can show an increase of \$17,000 00 above that of last year, not a startling gain but considering the business situation throughout the State entirely creditable A slight growth of income has enabled us to complete a \$10,000 00 revolving fund to care for emergency situations which may arise from time to time We have fulfilled our obligations to the National Tuberculosis Association and have rendered the required statements of our annual program and work accomplished, as well as furnishing them with our budget and financial statement, and in return we have again been designated as the representative of the National Association in the State of Massachusetts During last fall the National Association sent us Mr David Moxon, one of its Junior Staff members, for a period of practical training in field work This is in accord with the Association's policy and method of developing experienced personnel and I suppose we may feel complimented at their selection of Massachusetts as a desirable training school



To your President not the least achievement of our society is its close cooperation with the other health organizations in the State. Particularly intimate and gratifying has been our relation with the State Health Department. This relationship applies also to the locals in their contacts with the District Health Commissioners of the State Department and with their civic Health Departments. I must pause an instant to stress the importance of this close friendship not only with the public health service but with all private societies for the advancement of health. A united front produces the best results and we should always be first to identify ourselves with the health program of our respective communities so far as they represent approved and legitimate enterprises and so far as it involves no loss to our own immediate commitments. During the past year the League was able to render direct service to the Ten Year Program of the State Health Department by supplying as special nurse Miss Ethel L. Dill, R.N., whose service to the Department was most valuable and was duly acknowledged by it. In keeping with our policy of close contact with the Health Department a special committee was appointed at our annual meeting last year, consisting of Dr. Harold A. Gale, Chairman, Dr. Nahum R. Pillsbury and Mr. William N. Goodell, this committee to confer with the Department on matters controversial or otherwise which might arise affecting the two organizations. A number of meetings have been held and as one result there has been issued a joint pamphlet on "Home Treatment for Tuberculosis", copies of which have been distributed at this meeting.

We have been approached by the New England Heart Association with the suggestion that, our interests and activities being closely allied, a definite consolidation of the two organizations might prove of benefit to both and to the community at large. There are some difficulties in the way but the idea is in keeping with the general trend of health work, all branches of which it is well recognized are being strengthened by cooperative action, thus avoiding overlapping and increasing economy of operation. Any arrangement which the Executive Committee may find feasible will be referred to the Board of Directors for action at some future date.

Finally, a word of reference should be made to the Early Diagnosis Campaign. At a meeting of the Executive Committee of the National Association last week in New York it was reported that the Campaign throughout the country had gone with unprecedented success. The State Associations have taken hold of the enterprise with most creditable vigor and far more literature has been demanded than was anticipated. The early diagnosis films have been in constant use and their educational message has reached scores of thousands. Your President

was in Los Angeles a fortnight ago and there saw the bill boards of the city richly placarded with the poster, "Let Your Doctor Decide." In view of this general energetic prosecution of the campaign the country over it is gratifying to hear from the National Association that the work done in Massachusetts in connection with this campaign compares favorably with that done by any State in the Union. Of course, such educational propaganda is not for this year alone. It is a principle well recognized in tuberculosis work and early diagnosis should figure with especial prominence in all our future programs.

And now one glance into the future. The days of gross organization are over. There are still some loose ends to be gathered up in this field. But the present is a time to take up the refinements of our work. A careful survey should be made by each affiliated organization of its program for the future. Established lines of effort should be strengthened rather than new ones sought. The community support of our projects must be more fully secured. To do this more of the representative citizens of each district should be gathered into the fold. This is not easy for such people are already over occupied in good deeds. Recruits should be looked for among the younger generations. Local clubs should have their interest in the health program permanently enlisted. Frequently the summer camp has proved a ready means to this end. Greatest stress should always be laid, however, on the educational work. Here the schools offer our most direct mode of approach but the work is sadly needed in the industrial field and extension especially along this line is earnestly to be hoped for in the year that is before us.

In bidding the Massachusetts Tuberculosis League Godspeed for another year your President greets you with a heart full of gratitude for the splendid work accomplished by each and every one of you and with the hope that more power may be given to your sturdy spirits for the sometimes tedious, but always satisfying labors which loom along the pathways of the future.

## ANNUAL REPORT OF EXECUTIVE SECRETARY

FRANK KIERNAN, A.B.\*

YOUR Executive Secretary has completed his second full year in the service of the League and takes pleasure in giving a record of the work done in that period. This report will cover six general divisions, to wit: Finances, Administration, Field Work, Legislation, Health Education and Allied Activities.

### FINANCES

The report of the Treasurer for the year 1927, verified by a Certified Public Accountant, is the  
For record and address of author see "This Week's Issue," page 524.

official record of our financial operations for the year

The Executive Committee of the League, continuing the policy approved by the Board of Directors, adopted a budget well within the anticipated revenue for the year and by carefully watching our expenditures we were able in all departments to live within the limitations of the budget and come out at the end of the year with about \$1,000 to spare

The President has referred to the fact that the policy of adding funds each year to our emergency savings has been continued and we have attained the objective set by the Executive Committee in 1924. It will be the recommendation of your Secretary to the Executive Committee, to continue the policy of adding \$1,000 annually to our sinking fund on the general principle of thrift against the possibility of emergency situations or lean years that may come. The disasters in the South and other parts of the United States have demonstrated the wisdom of having such an emergency fund. The Budget Committee in February, 1928, submitted to the Board of Directors a budget for this year predicated upon a Seal Sale of \$250,000 in the Commonwealth. Latest returns indicate that the gross Seal Sale will reach \$255,000 which will give the League a small margin for undertaking activities, the need for which may develop during the year. That we were able to attain the highest Seal Sale ever reached in Massachusetts in 1927 is an accomplishment of unusual magnitude. As I journeyed over the State in the Summer and the early Fall in preparation for the 1927 Seal Sale, I heard in most places not from the local secretaries but from local volunteer workers, business men, physicians, teachers, and others, a warning that because of industrial conditions it was not anticipated that the Seal Sale would reach that of previous years. I do not think any other conclusion can be drawn for the fact that the Seal Sale exceeded that of previous years than that our local Seal Sale chairmen, under the leadership of our local Executive Secretaries, planned a better campaign, introduced the features recommended by the National Association's representatives, and carried the Campaign through with fidelity and attention to detail that made the results, even in the face of extraordinary adverse circumstances so gratifying.

It also should be observed that the tuberculosis movement apparently has so deep a grip on the hearts of the people generally that they are willing to make quite extraordinary sacrifices to keep the work going each year on an expanding basis.

I should not leave the subject of the Seal Sale without publicly expressing the gratitude of the League and the Affiliated Organizations to the National Tuberculosis Association in general, and to Mr. Frederick D. Hopkins, Dr. Philip P. Jacobs, Mr. Basil G. Eaves and Mrs. May F.

Sinks in particular, for their continued helpfulness in improving our Seal Sale methods.

#### ADMINISTRATION

The offices of the League have been continued in their location of the past five years in the Little Building with an increasing number of visitors both from our own State, the other New England States, other parts of the Country, and from foreign countries. Recently visitors to our office included a missionary and his wife home for a visit from Japan who are starting back and who wanted to take with them health education material, including the special material on early diagnosis. We were able to supply them with a varied collection of free material and arranged from them to see the motion picture film "The Doctor Decides" which, I believe, they have taken back with them for use in their labors with their Japanese people. Such a story could be duplicated many times concerning visitors from far countries who come to us in a variety of ways for advice and assistance in their labors in their own countries.

The President of the League at our Semi-Annual Meeting touchingly referred to the possibility of the coming of international peace not through the conversations of diplomats or the intricacies of treaties so much as through the efficacious communal efforts along public health lines. We in the League are able to participate in a small degree in furthering this development through our contacts with visitors from other lands.

The League Staff has continued without enlargement during the year. In my report last year I indicated that it might be necessary to enlarge the personnel because of increasing demands made upon us. This has not been necessary not because the demands have not increased but because we have better systematized the work of the office and apparently everyone has been willing to take on more work.

The *Massachusetts Health Journal* has been continued with a circulation of 4,000 principally in the Commonwealth but partly also in the other States of the Union. We have received from many sources complimentary comments on the character of the *Health Journal* and these inspire us to improve it with each issue.

The Department of Public Health advised us that it would not need the services again this year of a Field Nurse so the work of Miss Dill was concluded in December. So far as we know there will be no field nursing service given this year. When the time is right and the Affiliated Organizations indicate their desire to have it, we shall recommend the appointment of a Field Nurse on the Staff of the League to assist the local secretaries in their problems of nursing work, administration, and collateral activities.

#### FIELD WORK

Your Executive Secretary in the course of the

To your President not the least achievement of our society is its close cooperation with the other health organizations in the State. Particularly intimate and gratifying has been our relation with the State Health Department. This relationship applies also to the locals in their contacts with the District Health Commissioners of the State Department and with their civic Health Departments. I must pause an instant to stress the importance of this close friendship not only with the public health service but with all private societies for the advancement of health. A united front produces the best results and we should always be first to identify ourselves with the health program of our respective communities so far as they represent approved and legitimate enterprises and so far as it involves no loss to our own immediate commitments. During the past year the League was able to render direct service to the Ten Year Program of the State Health Department by supplying as special nurse Miss Ethel L. Dill, R.N., whose service to the Department was most valuable and was duly acknowledged by it. In keeping with our policy of close contact with the Health Department a special committee was appointed at our annual meeting last year, consisting of Dr. Harold A. Gale, Chairman, Dr. Nahum R. Pillsbury and Mr. William N. Goodell, this committee to confer with the Department on matters controversial or otherwise which might arise affecting the two organizations. A number of meetings have been held and as one result there has been issued a joint pamphlet on "Home Treatment for Tuberculosis", copies of which have been distributed at this meeting.

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children after intensive treatment for fourteen weeks to return to their school work restored to normal physical condition

Southwestern Middlesex County during the year purchased a site for a summer health camp on which it is now establishing a camp to be opened this summer for the underpar children of its territory.

Limitation of time forbids detailed enumeration of the progress of other Affiliated Organizations. It still remains true, however, as stated last year, that as your Secretary journeys over the State making contact with all sorts and conditions of people he hears everywhere that the Affiliated Organizations of the League are recognized to be the foremost volunteer health agencies at work in our Commonwealth.

#### LEGISLATION

We have been called upon less this year than in previous years to support meritorious health legislation and to fight undesirable proposals. The same arrangement which we have operated under in previous years has been continued. This arrangement is that we cooperate with the State and local health departments in supporting Bills which they favor and fighting legislation Bills which they favor and fighting legislation which seems undesirable.

It has been mentioned above that a Bill was introduced to enable certain counties to secure funds from the County Commissioners in support of the summer health camps. Your Secretary was petitioner and in cooperation with the Secretary of the Hampden County Association, fostered the progress of the Bill in the Legislature revising it and lobbying it along so that we have every reason to think it will be enacted into law.

We assisted in defeating a Bill which threatened the standards of eligibility for securing licenses in the Commonwealth as registered nurses.

#### HEALTH EDUCATION

You have heard from our Educational Secretary the story of her work during the past year. The health education work of the League, in which somewhat over one third of our revenue is put, has, under the leadership of Miss Johnson, continued to enjoy a healthy and substantial growth.

Health education will suffer a severe loss when Miss Johnson leaves us in the Fall. She has built up a good will among educators, nurses, and school authorities generally that is a substantial asset to the League and its Affiliated Organizations. Although she contemplates moving to another of our New England States we hope that her interest in our work will continue and that as she occasionally comes back to Massachusetts we will have the privilege of contact with her so that we may have the advantage of her check on the progress of our activities in this field.

Hampden County Association at Proven Alou-tain for the care of Holyoke children during the eight weeks of the prevention season.

The Lowell Tuberculosis Council, during the year, expanded its membership so as to bring in to its activities representatives of the various sectarian groups in the City. This plan has worked with great success and more cooperation has been had not only with these groups but with the Health department and the School Department so that the Lowell program of work is now as constructive and comprehensive a program as is being carried on in any part of the Commonwealth.

In Malden Representative George L. Richards, for many years President of the Anti-Tuberculosis Society, has been succeeded by Mr. John Ritchie, long a Director of the League for merit a Health Commissioner of the City of Boston, and a man of varied activities in the public health field during the past twenty years. Mr. Ritchie signaled his accession to office by organizing a mass meeting which was held in the Malden High School in connection with the Early Diagnosis Campaign and in which leading physicians and health workers of the City participated. Contrary to all the canons of holding health meetings, the large auditorium was packed with adults and older children to listen to a varied program on the subject of health over a period of two hours. This doubtless is the beginning of a year of enlarged usefulness of this Society, of which Mrs. F. Anna Green is the Secretary.

Southern Worcester County Health Association during the past year has extended its service, especially its health education service, to practically all the towns of its large territory. The new full-time Executive Secretary, Miss Christine B. Higgins, has with great energy expanded the program of health education for school children and adults so that every part of the territory is feeling the influence of the County Association.

The Southern Middlesex Health Association has expanded its program of health education, industrial health work, and summer health camp work, engaging the full time service of its Executive Secretary and an additional nurse who are doing an outstanding piece of follow-up work and preparatory work in connection with their exceedingly fine summer health camp. This Association has also inaugurated a Place ment Service for arrested tuberculosis patients, upon which great demands have been made during the year to secure employment for persons who have returned from sanatoria.

In Plymouth County and in Norfolk County the summer health camp for an additional period of six weeks enabling these children to return to their normal lives.



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## EDUCATIONAL REPORT

MISS ANNA W. JOHNSON\*

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*Signs of Growth*—There is growth and progress in the health education work, it is shown not only by the amazing rapidity of the growth in the last few years, but also by the form of its development Slowly but surely it is developing from *within*, becoming an integral part of the school curriculum It has taken on permanency and assumed the dignity of a recognized member of the educational family The growing interest of the teacher, the enthusiastic response from the children, are notes of progress There is life color, vitality in the health program Exhibits of health education material spell a story of life in color and action Health in its manifold relationships to all phases of life obviously is a thing of strength, color, power It can vitalize all other subjects, both the play element and the realities of life are combined in a wonderful way Thus is explained its appeal to children, thus is explained the ease with which the health program may be woven into the entire fabric of school life and activity

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As the President has stated we have been fortunate enough to secure a successor to Miss Johnson whose training and experience and personality are such that we have every reason to believe the health education program in Massachusetts will continue with unabated expansion.

Under the head of health education should come the important subject of the Early Diagnosis Campaign which was originated by the National Tuberculosis Association and carried on a nation-wide basis during the month of March. The Campaign was extended in the Commonwealth so that it ran through the months of March and April.

Practically all the Affiliated Organizations of the League carried on an intensive Campaign utilizing standard and some new methods of impressing the people with the importance of early diagnosis. It was a Campaign in health education that was exceedingly worthwhile.

Coming as it did, however, right on the heels of the Seal Sale it has seemed to me that it placed upon all of us a strain which, after the intensive period of the Seal Sale, we were not quite prepared to assume. I have made strong recommendation to the National Tuberculosis Association that the Campaign projected for 1928 be held later in the year to enable us to have a period of readjustment after the Seal Sale before undertaking another intensive piece of work, extending over a period of one or two months, in addition to our regular work.

#### ALLIED EFFORTS

Your Secretary has been honored with an invitation to present a paper at the National Tuberculosis Association Annual Meeting to be held in Portland, Oregon, in June. I am at work now on this paper having secured help from the National Office, from the Secretary of New York State Tuberculosis Association and Pennsylvania Association, from the President of the National Conference of Tuberculosis Secretaries, and from some of the Secretaries of our Affiliated Organizations. As I make the trip across the country it is my purpose to visit the outstanding tuberculosis associations in several of the States to learn at first hand some of the successful methods that have been employed to the end that they may be as far as possible put into action in our own Commonwealth.

Your Secretary was again called to serve as President of the New England Conference of Tuberculosis Secretaries which has again been invited to arrange the program of the Tuberculosis Section of the New England Health Institute which is to be held in Burlington in September of this year.

In various parts of the Commonwealth your Secretary has been invited to speak to Rotarians, Kiwanians, Lions, Parent-Teacher Organizations, student bodies of schools, and at the annual meeting of a number of the Affiliated Organizations of the League.

During the year it has been my rare privilege to be associated with the State Commissioner of Public Health, with the Deputy Commissioner, and with the Director of the Division of Tuberculosis.

The Health Commissioner of the City of Boston, the Deputy Health Commissioner, and the Director of the Division of Tuberculosis have been consulted with from time to time in connection with our State and local programs.

I have been a regular attendant of the meetings of the Massachusetts Associations of Boards of Health and the meetings of the Massachusetts Central Health Council.

As a member of the American Public Health Association, I have been invited to participate in the conference to plan public health programs for Chautauqua circuits in the Northeastern section of the country.

Conferences for the local secretaries who conduct summer health camps, conferences for the special purpose of preparing for the Christmas Seal Sale have been held.

In the Fall of 1927, as President of the New England Conference of Secretaries, I arranged a series of meetings which began in Providence and which were conducted also in Springfield, Boston, Greenfield, Manchester, New Hampshire, and Portland, Maine.

#### FINALLY

This is the story of the past year. We do not contemplate any substantial change in the year we are beginning and with the high quality of work that is being done by most of our Affiliated Organizations no material change is recommended. However, there is one particular in which I think it would be profitable for all of us to engage. This is to follow the example of the Cambridge Association, which has undertaken to search its own program, first, by having a scientific determination of the facts in the City of Cambridge by a competent health surveyor, secondly, by bringing into conference two of the outstanding men in the Commonwealth to analyze with its Board its program of activities for children.

What more useful thing could we all do in 1928 and 1929 than undertake self-examination with the assistance of outside persons competent to help us arrive at a fair valuation of the things we are doing and recommend changes, substitutions, or enlargements of our programs of work where such changes or enlargements seem to be the part of wisdom? In bringing my report to a close, I leave this thought with you for careful consideration.

The final word I have to say is one of gratitude to the President of this League, to the Officers and Secretaries of the Affiliated Organizations for their continued helpfulness throughout the year. It is not only a privilege and a pleasure to work with you in Massachusetts but there is the additional gratifying situation that

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and the fall conference of the Sisters, Father Quinlan gave first place on the program to health and health education. These meetings with the Sisters have shown more than the interest and response recorded in other reports. There has been not only the desire to carry on more health work, but also a definite effort to use our suggestions and material. Every meeting has been followed by a period in which the Sisters have gathered about the table where material has been displayed. Here they have lingered until chapel or convent bell called them to their next duty.

A very encouraging record has been established in the parochial schools of metropolitan Boston. Whereas in September one or two parochial schools owned scales, today in April, every parochial school in the city has scales and a great campaign of weighing has been inaugurated. Underweight children are weighed every month. Many splendid gains in weight have been recorded and the children are taking great interest in comparing their weights at the end of five-week periods on their score cards.

Sisters, too, are not without a sense of humor. One reports that in reply to any question asked, she receives one of two replies. Whatever her question may be, there is one of two answers—"God" or "Milk"!

Much the same kind of report might be given of the public school teachers. Our group meetings with them have shown more interest and response to a definite program—something constructive and positive—and they have been keenly alive to the activities and projects of other teachers in other schools as they have been on display. In one superintendent's opinion, this is one of the best contributions of the educational work—the assembly of material which shows the teacher's own work, the product of her endeavors. Both in the public and parochial school field, this group method has demonstrated its value.

*School Nurses' Conferences*—School nurses' conferences too, are in part a solution of the more effective extension of the message of the modern health education program. The efficacy of the *group method*, as some of our secretaries will testify, has been proved by assembling the nurses for discussion of ways and means to improve and develop the classroom program, showing the way by which the nurse can stimulate and help the classroom program. Instead of travelling miles to one small town after another to see one nurse at a time, the contrasting possibility is obvious, when to an assembled group of fifteen or sixteen nurses, one concentrated effort can be made to present programs and plans, with opportunity for exchange and discussion of both. These conferences, held in cooperation with the State Department nurses, are to be commended for more extensive development.

*Workers' Conference*—One of the outstanding events on the educational calendar was the

health education session of the workers' conference held in February. An attentive audience of ninety-six people sat for three hours, and their manifest interest, enthusiastic comments and reactions gave evidence to the success of this type of conference. In place of a profusion of methods and plans, devices and discussion of a general program, the meeting was *testimony*—an experience meeting of the program in action. The success of the meeting was due in part to the personality of the individual speakers, but also due to the fact that these speakers gave actual evidence of a working, workable program. The speakers included a superintendent of schools, director of health education in the public schools, a principal of a large building, a classroom teacher and the school nurse. Richard Schmoyer, newly elected director of physical education and health education, read a masterly paper on the "Articulation of Health Education in the School Curriculum." This has been published in the *Health Journal* but will receive still greater distribution for it is to be printed as one of a health education series of the League and given to educators and health workers in Massachusetts. We thus will have a notable contribution to health education programs in the Commonwealth.

*From the Service End*—It seems hardly necessary to speak of our "stock in trade"—our various types of health educational service material, but it is gratifying to have the increasing number of requests for this "stock in trade" which signifies growth. Our appreciation, our recognition of work well done, is extended to those faithful workers who year after year cooperate so closely, unswerving in their adherence to the line of each new year's call. Welcome, too, the new faces, the new names, those who are gradually becoming acquainted with the League's services. A teacher's letter the other day stated, "I have come from the Pacific Coast and wish I had known before your organization. Next year I shall wish to avail myself of your services and material." In addition to our increased library circulation and sales of material, and the ever increasing number of requests for the *Bulletin*, a word should be said of the increased number of requests for all kinds of cooperative enterprises in connection with the nation-wide observance of May Day—Child Health Day. Stimulated and encouraged by the very complete and splendid program of Dr. Champion's division of the State Department, every one feels an added responsibility and a quickened ambition to make this May a story of achievement in the Child Health World.

Problems always face us and perhaps the two most outstanding problems of the health education work are

- (1) The health of the teacher
  - (2) The health of the high school group
- Teachers suffer from all kinds of physical

ture, which produce all kinds of mental and nervous complications. There are teachers, far too many, in our classrooms who have wrong mental attitudes, who suffer from the pressure of the overloaded curriculum. All joy in teaching is gone. The inevitable reaction on pupils in addition to its great habit to the teacher herself, is extremely detrimental. The public health slogan of "Make Yourself a Birthday Present of a Physical Examination" has not reached the teaching profession except in rare instances. One of the nurses in this audience could tell a most interesting story of a teacher whose life has been actually transformed, who has found most radiant joy in her successful pursuit of health. Life had become a wholly different story to her and the result of this on her teaching and her influence with the children obviously is notable. Recently another teacher told of dragging along for years wholly unconscious that her lack of energy and spirit might be explained by preventable ill health. Today with the removal of her tonsils, and with better diet, she is a living example to her pupils of energy, attractive appearance and radiant health.

*The High School Age*—"Yes, it is a neglected age", said a superintendent of schools, "and we are only just beginning to realize how very much neglected it is in the very fundamentals of health." Within this past week in a prosperous town which boasts a beautiful high school, it was rather startling to find a zero count on physical examinations, no physical examinations, no weighing, for any high school pupils, not even for the members of the athletic teams. This is but another evidence of the need for ever vigilant and vigorous educational efforts.

To meet this high school problem attempts have been made, seemingly slight perhaps, but at least attempts. The playwriting Contest has been a definite but interesting and successful attempt to reach the high school group to interest them in the expression in dramatic form of modern health problems. Health problems in relationship to life. A large group of worth-while health plays is now available for high schools all over the country in addition to the educational value obtained through the writing of the play and the many groups before whom the plays have been presented. Here in Massachusetts we also have the thrilling and spectacular feature of the presentation of plays at the Copple Theatre.

In Massachusetts we have tried also to reach the high school groups in their assemblies, with talks on health in general and the tuberculosis problem in particular. The approach has been made from the economic standpoint and the story of man's gradual thrilling conquest of disease. There has been excellent response from these groups and it is estimated that between five and eight thousand students have been

reached with this type of message which seems to appeal to that age group. The National Association has developed also a suggestive health program to be used in high schools by a joint, cooperative effort of science and hygiene departments. These programs are now in the hands of some of the principals of high schools in which talks have been given and they have promised to report to us before June as to whether such a program can be adopted in their high schools. One of the definite plans of the education department for the near future is the follow-up and extension of this plan which seems a real step in the right direction.

In addition to this, we have distributed a pamphlet called—"The Neglected Age" issued by the National Association, and containing articles by Dr. John A. Smith of that Association and Dr. Walter L. Rathbun of Cassadaga, New York.

Minor problems constantly face us. We teach the washing of hands before each meal, but still we find many, many schools which have either no washing facilities or wholly inadequate ones. It is surprising to find these conditions in larger schools of good sized towns where one hardly expects both unhygienic and inadequate facilities. It is more to be expected in the rural schools and yet we often find satisfactory facilities in our rural schools. For instance here is a rural school which at the beginning of the health program had none. In a tiny hall the children have helped to rig a bench, to supply the basin, paper towels and cups. The children share the responsibility not only of bringing fresh water but also of keeping all in good condition. In this tiny space also is another shelf on which a small gas plate cooks the hot lunch for these children who hitherto had nothing but cold lunches.

*Ventilation*—Ventilation is ever a problem. It will take nothing short of a violent explosion in many schoolrooms to move the thermometer from its customary 75 or 80 degrees to the health standard of 65 or 68 degrees. This is really a universal problem, though in pleasing contrast, is the classroom where sit forty boys in light weight blouses in a temperature of 67 degrees, an every day occurrence, and we are gradually acquiring a list of rooms which measure up to this standard.

Whatever growth we can boast in our work, whatever achievement we may count, can be acknowledged only through the support, the willing, cheerful, persistent coöperation of our affiliated organizations. In all directions, in all ways they have set their stage to develop the educational program and no feeble word of mine can fitly express the credit due them and the sincerest appreciation of their loyalty and endeavors. Nor is it possible to express the most grateful appreciation of the privilege and inspiration experienced in working under the leadership of my Chief, with the wise, stimulating

and splendid vision of our honored President

*A Word to the Future*—Health education has to a great extent been confined to the school field because of the firm belief that children are the hope of the world but health education today reaches and must reach into every channel and avenue of life. Dr. Matthias Nicoll of the New York State Department of Health recently said, "All of the modern discoveries of medical science would be of little avail if they were not put into application by the process of public health education." It is difficult for you and me (to whom this health story is so obvious, so time-worn) to realize that the field still stretches, a vast plain before us for cultivation. Whether it be the man in the factory, the girl in the office, the Americanization class, the labor union, the church group or a child, the health education program today follows certain general fundamental statements as the basis for our program.

That Prevention is possible

That Health is purchasable to a great extent

That it Costs much to get well

That it Costs little to keep well

That Good Health is the greatest asset

That Ill Health is the greatest liability

That it becomes a dollar and cents proposition as well as an avenue to

Greater Efficiency, Happiness, Service

We know our health education creed for the children's field may be summed up in very familiar language and may be applied quite generally to the larger field. It is a plain obvious truth that delicate children, for instance, are very costly liabilities, we know that these delicate children can be built strong and healthy through right living. We know it is possible for a child to possess this gift by his *own efforts* which are stimulated and aroused by the modern educational methods at camp and in school. We know it is wasted energy and money to have a health program for a summer unless that program functions in continued action. We know

ailments, many minor, many preventable in nature that the school through its group organization, its public opinion, its leadership, often can stimulate action and efforts impossible for any other agency, even the home. We know that the mills of education grind slowly but also that they grind exceedingly fine and as efforts and programs develop, the physical growth feeds mental growth. The physical and mental growth establish a balance of emotional well-being which builds toward *the whole child*.

Can we visualize all the possibilities, the significance of growth, efficiency, power which is expressed in an assembly to which you are invited in a fifth grade? Here are found children who are blossoming under the health work of today and their little assembly expresses a significance far deeper than the words would seem to signify. Spirit and Vigor are here. They stand with excellent posture and recite

'We pledge allegiance to health

And to the principles for which it stands,

One clean sound body, one clean mind,

A heart all pure a strong right hand

With liberal education and good health for all

The Crusaders' Cheer, a song or the Crusaders' Creed may follow. But perhaps it all may be summed up—all of this health education message, in a poem which the children love dearly

#### MY HEALTH HOUSE

I am building my Health House day by day,  
As I eat and sleep and work and play  
My food is the lumber that I use  
And the best materials I must choose  
(Such as milk and vegetables, fruit and eggs)  
While Fresh Air furnishes nails and pegs  
And Sleep, the carpenter, takes them all  
To silently fashion each room and hall

If I build aright, when I am grown  
I shall have a house I am proud to own  
No need for breakdowns and repairs,  
For good material wears and wears  
So I'm building my Health House day by day,  
As I eat and sleep and work and play  
Some build for Happiness some for Wealth  
But I'll find both in my House of Health

—Rispa Goff Howell

# Case Records of the Massachusetts General Hospital

ANTE MORTEM AND POST MORTEM RECORDS AS USED IN  
WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY R C CABOT, M.D

F M. PAINTER, A.B., ASSISTANT EDITOR

CASE 14151

HEMATURIA, DYSPNEA AND ACUTE  
ARTHRITIS

MEDICAL DEPARTMENT

A married colored woman twenty-four years old was sent from the Out-Patient Department January 21

Five months before admission she took cold had headache and generalized lameness and vomited. She was in bed until the end of November. The vomiting became severe and finally stopped. During the second month she had cough and some dyspnea. Late in November her left great toe became swollen and tender and the ankle swollen. From the end of November until the day of admission she had worked, the cough and dyspnea had increased and she had urinated twice at night. For the past four weeks her ankles had been swollen at night, normal by morning. She had had pains about her heart for the past three weeks. A week before admission her right ankle became red, tender and too painful to walk on. This was now better. She thought she had passed more urine than usual recently. For four days her micturition had been painful and her urine very red. Since the onset her appetite had been poor, her bowels irregular. She had lost twenty-two pounds and was very weak. The day of admission she had palpitation.

Her family history is good. Her past history is irrelevant. Recently she had taken half a glass of ale daily. She had not menstruated for five months.

Clinical examination showed a poorly developed, emaciated, nervous young woman with pale and slightly cyanotic mucous membranes. Apex impulse of the heart felt in the fifth space 10.5 centimeters from midsternum, 1 centimeter outside the nipple line, corresponding with the left border of dullness. Right border 2.5 centimeters to the right. Action regular, rapid. Sounds of fair quality. A loud musical systolic murmur, best heard at the apex but transmitted all over the precordia to the axilla and both backs. A short systolic thrill at the apex. Pulmonic second sound greater than aortic second and accentuated. Pulses and arteries normal. Lungs normal. Liver dullness from the sixth rib

to two centimeters below the costal margin. Edge indistinctly felt, very tender. Both ankles slightly swollen, the right more than the left. Extreme tenderness over the bony projections of the joint. No edema. Pelvic examination: cervix in the axis of the vagina, not enlarged or soft, freely movable. Fundus not made out. Culs-de-sac free. Pupils knee-jerks and plantars normal.

Amount of urine normal. Specific gravity 1.005 to 1.010. Smoky or cloudy at all of 20 examinations. High colored at 16. Red at 20, alkaline at 13. Neutral at one. A trace to a very large trace of albumin at all. Red blood cells at all in large numbers at 7. A catheter specimen showed many red cells, no casts, a few squamous epithelial cells. 13 of the last 15 specimens (not catheterized) showed few to many leukocytes. Blood 12,500 to 24,000 leukocytes. Polymorphonuclears 79 per cent to 85 per cent. Reds 2,540,000 to 3,750,000. Slight to moderate achromia, anisocytosis and poikilocytosis. Slight polychromatophilia in one of three smears.

Temperature at entrance 97.2°, afterwards 98° to 103.1°. Pulse 75 to 142. Respirations 21 to 50.

By January 24 the soreness was gone from the ankles and the patient was doing well. The pitch of the murmur changed from C on January 23 to A on January 29. February 1 a blood culture showed no growth. No cause for the urinary condition was found. February 5 a musical murmur at the apex replaced both sounds. There was no presystolic. The patient had night sweats and anorexia. The cough was better. The general condition not so good.

February 9 cystoscopy showed blood issuing from both ureteral orifices, more from the left. The bladder was practically normal.

February 13 the character of the murmur at the apex had changed again. The musical tone was gone and the murmur was harsher. The urine contained more and more pus.

February 17 the pulse suddenly became weak and running, and was almost imperceptible at the wrist. The cough became more harassing. Early the next morning the patient died.

## DISCUSSION

BY RICHARD C CABOT, M.D

## NOTES ON THE RECORD

"She had not menstruated for five months." That fact seems to be significant, showing that there had been important illness going on during the whole period of five months. What is the nature of that illness? We ought to guess previous to physical examination. The most definite thing is these two attacks of arthritis. I do not see any reason for not calling it acute infectious arthritis. It might be gonorrheal. It is more likely to be "rheumatic," that is, of un-

known bacteriology. Besides that we have dyspnea and cough, which together with the joint symptoms make us think of the heart, also we have vomiting in the beginning. We do not hear anything of gastro-intestinal symptoms towards the latter part of the illness. I guess we are right in not paying much attention to those and in supposing they were either those characteristic of the onset of any infectious disease or possibly were influenced by medication. The type of medication that is given in these cases—salicylates—often leads to vomiting.

#### NOTES ON THE PHYSICAL EXAMINATION

There is a suggestion of slight enlargement of the heart, but nothing that we should want to stake our eternal salvation on if we had no other evidence than this. The thing that we ought to be told, and are not told, is whether this murmur replaces the first sound or not. I think there is a real importance in that. The so-called functional murmurs, those not associated with anything found in the heart post mortem, generally accompany the normal heart sounds but do not take the place of them. A systolic thrill, if we can be sure it is a thrill, is certain evidence of organic heart disease. I do not think there is any reason to make that statement less absolute. But there are many things called thrills that are not such. So many men were rejected from the British army on account of "thrills" during the war that the order came not to consider thrills at all. When a man is excited his apex impulse feels very much like a thrill unless one is an old hand at the matter. So we must take this as evidence of organic heart disease. We shall inquire later what type of organic heart disease.

The tenderness of the liver edge is an important point, as evidence of a congested liver.

There is presumably some inflammation of the ankle joint, but no edema.

In the pelvic examination we have no evidence of any gonorrheal infection.

I understand that in twenty examinations the gravity of the urine never varied except within these limits. That is important if true. If we have a large number of examinations, some of them are pretty sure to be at different times of day, and if they are at different times of day we have pretty good test of the capacity or incapacity of the kidney to concentrate urine,—as good evidence as we could get by a special test made for that purpose. In twenty examinations the variation was only from 1.005 to 1.011, and that is strongly suggestive of hyposthenuria or loss of the power to concentrate, which is one of the most reliable of the symptoms of nephritis. The catheter specimen is of course the only one we can trust as to sediment.

I can see by the number of this case that it was quite a number of years back (1910). We were not doing then (and I think very few hos-

pitals if any were doing) the tests for retention products, blood urea nitrogen, etc., or the functional test for measurement of the kidney function. Also we notice no blood pressure measurement. So that we have now all the evidence we are going to have about the kidney.

There is secondary anemia such as we expect with the diseases that we are thinking of.

The chart shows a continued fever practically for four weeks, with the pulse most of the time at 120. Nobody ever had continuous fever for that length of time, so far as I know, from nephritis. She must have something else.

I must have taken care of this patient, because nobody else records the pitch of musical murmurs. We say that a change of pitch should go with a change in the shape of the vegetations on heart valves.

On February 5 we have a diastolic murmur, which makes us feel surer, of course, of our diagnosis.

#### DIFFERENTIAL DIAGNOSIS

Unless all the cards are stacked against us we ought to come out right on this diagnosis. We have a patient who shows signs of heart disease and signs of infection, who runs a four weeks' continuous fever with sweats and leukocytosis, who has in the end double heart murmurs, which have been shown to shift in pitch, who has also the signs of joint infections which so often go with a subacute bacterial endocarditis, which is what this ought to be. Most of these cases have a certain amount of incompetence of the heart, partly, I suppose, mechanical, and partly due to the weakening of the muscle from the infection itself. We expect to find some chronic passive congestion of the lungs. We expect to find some enlargement of the heart. We expect that there will be a fibrous or calcareous lesion underneath the more vegetative lesion on the top. Where? We have nothing to point to the aortic valve. Next to that the mitral is as common as any, but in most of these cases we find more valves involved than we have expected during life. So I think it is a good chance that there will be more valves involved, though on the face of the returns we cannot say so.

The absence of a blood culture and the absence of any signs of embolism of which we can be sure—I say of which we can be sure, because there is suggestion, certainly, of renal embolism in all this—hematuria—makes us somewhat less certain of our diagnosis. On the other hand this is a disease very frequently associated with a glomerulonephritis, so that we do not need to suppose emboli in order to account for that hematuria. Other than those possible renal emboli I do not see any suggestion of emboli elsewhere. But that state of things is not unknown in cases of known subacute bacterial endocarditis. The same is true of the blood culture. Posi-

tive blood culture means something, negative means nothing

A PHYSICIAN Does not a fixation of gravity mean chronic nephritis, or can it occur from kidney infarcts?

DR CABOT I think I can remember here cases where we have been shown at post-mortem extensive infarctions or emboli without nephritis, with fixation of gravity

#### CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Malignant endocarditis

DR RICHARD C CABOT'S DIAGNOSIS

Subacute bacterial endocarditis

Probably chronic endocarditis of the mitral and other valves

Hypertrophy and dilatation of the heart

Chronic passive congestion, general

Renal embolism?

Acute glomerulonephritis?

#### ANATOMIC DIAGNOSES

##### 1 Primary fatal lesions

Subacute vegetative endocarditis of the mitral valve

Septicemia

##### 2 Secondary or terminal lesions

Septicemia, streptococcus mucosus capsulatus

Hypertrophy and dilatation of the heart

Chronic passive congestion, general

Infarcts of the spleen and one kidney

Lobar pneumonia, right upper and middle lobes

Subacute glomerulonephritis, intracapillary and capsular

##### 3 Historical landmarks

Obsolete tuberculosis of two mesenteric lymph nodes

DR TRACY B MALLORY A vegetation was found on the mitral valve. The other valves were negative. Infarcts were present in the spleen and kidneys. There was also a glomerulonephritis, not involving all the glomeruli but picking out individual ones here and there,—the so called focal nephritis which is probably embolic in nature. It is at least most common in subacute bacterial endocarditis.

There was also a terminal pneumonia, lobar in type, of which no suggestion was given in the history.

The cultural studies on the case require some interpretation, since the terminology of 1910 is not that of the present. The organisms were grown on blood serum and streptococci were found in medium length chains with capsules, and the diagnosis of streptococcus mucosus capsulatus, which presumably is what we now call a

Type III pneumococcus was made. Occasionally other streptococci may be encapsulated in the body, although I should not expect them to show capsules on culture medium. Without a bile solubility test it is impossible to be certain what organism they had. On the whole I think it is probable that it was a Type III pneumococcus, which is relatively uncommon as a cause of subacute bacterial endocarditis. It is possible that the organism grown was simply a terminal invader from this pneumonia of the last few days and that they failed to recover the organism that was the cause of the bacterial endocarditis.

DR CABOT How big was the heart?

DR MALLORY 285 grams—a little small

DR CABOT Was there any passive congestion?

DR MALLORY There was a moderate degree, of the liver and spleen

DR CABOT Any old endocarditis behind the fresh?

DR MALLORY No record is made of it

A PHYSICIAN Was the liver large?

DR MALLORY Normal in size,—1600 grams

#### CASE 14152

EARLY SYMPTOMS OF NEURITIS SUBSEQUENT INVOLVEMENT OF SPINAL CORD ANACIDITY BLOOD NOT CONSISTENT WITH PRIMARY ANEMIA IMPROVEMENT BOTH BEFORE AND AFTER TAKING LIVER

#### NEUROLOGICAL DEPARTMENT

An unmarried American hairdresser thirty-five years old entered the hospital October 4 complaining of weakness and stiffness of the legs.

She was well until two years before admission. That summer the edges and tip of her tongue were very raw and tender for several months. In the autumn she was under great physical and mental strain, and became considerably weaker. In November her hands became numb to pain, touch and temperature. The death of her mother in December brought on a general mental and nervous breakdown. She had not been able to work since that time. In January after an attack of influenza her legs became gradually weaker, so that she was unable to walk very long without stumbling. Since that time the rectal sphincter had been incontinent at times. February 20, eight months before admission, she went to the Out-Patient Department in a run-down condition with numbness of the hands. On examination the arm reflexes were not obtained. There was some ataxia, some paresis. Knee-jerks slight. Right ankle jerk normal, left not obtained. No clonus or Babinski. Swaying in Romberg. Fundi and cranial nerves normal. A blood Wassermann was negative. After a visit away from home she felt particularly well and her hands became entirely normal. She con-



tinued, however, to have "nervous upsets", as she had for years. Her legs gradually became stiff and her feet tired very easily and sometimes doubled up under her. In August the middle third of the upper surface of the tongue was sore for two weeks. September 25 the spinal fluid and another blood Wassermann were negative. Since that time she had felt drowsy. At admission her legs were stiff but she was able to walk for a short time with support. Her hands were not numb. She had poor control of the anal sphincter. Her appetite was very good, especially for acid foods. Her bowels moved once a day with cathartics.

Her mother died of pernicious anemia and arteriosclerosis. She had pallor, weakness, stiffness of the legs and frequent stumbling like the patient.

At thirty-two the patient's hands quickly turned gray. For the past eight or ten years she had had palpitation, vomiting, incontinence and "biliousness" with her nervous upsets. Sometimes she would vomit only her breakfast after being nauseated. At other times the vomiting continued for two or three days, ending with the vomiting of greenish bitter fluid and with a slightly greenish color to her skin. The last attack was in July, fifteen months before admission. From January to August before admission she urinated every fifteen minutes by day and was incontinent, but did not urinate at night. She had been gaining weight lately.

Clinical examination showed a well nourished woman with gray hair. The skin of the hands and wrists showed areas of loss of pigmentation. The lungs, heart and abdomen were negative. Neurological examination showed the cranial nerves negative, the arm reflexes active. Abdominal reflexes obtained in the upper quadrants, not in the lower. Leg reflexes active. Left knee-jerk and ankle-jerk greater than right. Ankle clonus, left ten seconds, right one to two seconds. Babinski and Oppenheim not obtained. Sensation seemed normal over the head, neck, chest and upper extremities down to the level of the umbilicus, where she seemed to note sharp and dull objects and cold more than above. Hypersensitive to pain and temperature over both lower extremities. Some motor weakness of both lower extremities. She was unable to stand without falling forward.

Urine 33 to 71 ounces. A catheter specimen showed no albumin, sediment, 15 leukocytes per high power field, culture, no growth. Another specimen showed specific gravity 1.018, the slightest possible trace of albumin. Blood 10,000 leukocytes, 61 per cent polymorphonuclears, hemoglobin 80 per cent at two tests, reds 4,040,000 to 5,080,000, slight achromia, anisocytosis and poikilocytosis, platelets somewhat diminished. Fasting contents of the stomach 40 cubic centimeters of light yellowish mucoid material, free hydrochloric acid 0, total acid 5,

guaiac positive. Microscopic examination showed 10 to 15 leukocytes and 8 to 12 red cells per high power field and considerable numbers of motile bacilli and cocci, no starch. Test meal free hydrochloric acid 0, total acid 7, guaiac negative. Hematocrit cell=40 per cent of total blood volume.

Temperature 97.9° to 99.4°, pulse 73 to 89, respirations normal.

X-ray examination showed no abnormalities of the stomach, duodenum, or ileum. Tenderness was elicited over the lower end of the cecum. Appendix seen. Its motility was somewhat limited and it was pointed to the left, beaded in appearance. There was definite tenderness over it. The remainder of the colon was negative.

With 50 drops of dilute hydrochloric acid with each meal the patient was very comfortable and had no complaints.

It was found that the tongue was not atrophied, and that the blood smear showed a definitely abnormal but not at all marked variation in the size of the reds and rare moderate sized tailed microcytes. October 13 the neurological picture was possibly somewhat improved. The hands showed almost no ataxia. The ataxia paraplegia was perhaps improved. The walking continued about the same. October 16 she was discharged.

February 13, four years and four months later, she reported that she was quite well. There were no paresthesiae. Gait and station were almost normal. Babinski was still positive on the right, and there was marked postural sense disturbance in both feet. She was regularly following the treatment prescribed.

## DISCUSSION

BY JAMES B. AYER, M.D.

This is not a post mortem case, but it has a number of points of clinical interest and is worth of discussion on the basis of data that we have.

After her mother's death in December she evidently had some psychic and some physical difficulty. Earlier symptoms were apparently prodromal. Now we come to something that is more definite, something that comes in a fairly acute manner. The loss of sphincter control is the most definite thing of all, I think. It is fair to say that when we have sphincter difficulty we have either a patient with a very severe cerebral disturbance so that he is incontinent because he is perhaps not conscious, or semiconscious, or does not pay attention, or we have a moderately severe cord affection. When either sphincter becomes relaxed it is fair to assume, if it is neurological at all, that this sphincter disturbance indicates a spinal cord lesion of considerable gravity, and coming with the stumbling and numbness or "anesthesia" as it is called, it sounds very much like a rather severe spinal

cord affection, not at one level only but diffuse, because the arms also are involved

"Paresis" means weakness, not paralysis. We are not told whether paresis refers to the arms or to the legs. Again they should specify. We do not know whether there was any plantar reflex or whether it was a normal one. It obviously was not an abnormal one, as indicative of pyramidal disturbance. But in a case of diminished reflexes such as we have here it is very likely that the plantar was diminished which is significant.

The record does not say how long this improvement lasted but a transitory numbness of the hands makes us think of a good many things,—physiological disturbances such as one meets with occasionally, but more especially mild neuritides may act that way. Neuritis from different causes is the most common of pathological conditions that will act this way.

There is stiffness and weakness coming on insidiously after she had apparently got better so far as the arms were concerned, so that we may well be dealing with a progressive spinal cord disorder which has changed its character.

I have just looked up this spinal fluid and I find that it is entirely a normal test,—the total protein 36, one cell, globulin zero, gold sol 0000000000 and the pressure relations normal.

I think all we can say from this history is that at this time she has a perfectly good story for a severe diffuse cord condition which has in a way passed by, leaving her with something that has come on, these sensory symptoms at first with numbness of the arms, particularly of the hands, then developing weakness of the rectal sphincter, and later still a condition suggesting pyramidal tract disturbance with spasticity and with weakness of the lower legs.

One should think of course in a condition like this, very much of pernicious anemia with cord symptoms, and it is largely because we want a discussion on the cord symptoms of pernicious anemia that this case was used.

About heredity in pernicious anemia I do not feel competent to say anything. It is interesting that the mother's symptoms should have been similar to the patient's.

There are gastro-intestinal symptoms in the picture which have not come out before except for the tongue. Perhaps I should leave these for some medical consultant. There is nothing very definite here. They certainly do not suggest strongly any surgical condition nor do they suggest very strongly the crisis that we see. Perhaps they are intercurrent, perhaps accompaniments of the anemic situation, if it exists.

In women we do not pay much attention to abdominal reflexes. If we get them well and good. I am talking about stout women or women who have borne children. That applies also to fat men, especially to anybody who has lost weight, where the abdominal walls are relaxed.

There is ankle clonus now. That was not mentioned before.

With lively reflexes, ankle clonus and spastic gait it seems likely that we have disturbance of the pyramidal tract, and perhaps on another examination Babinski would have been obtained.

At this time, before the laboratory report is taken up, when she comes in after this period of diminished reflexes and periods of numbness and even anesthesia we have weakness which is now associated with spasticity. We have still the sphincter disturbance, we have a sensory disturbance which apparently is a hypersensitive condition rather than anesthesia. I take it that is the objective examination, and that is for pain and temperature and tactile sense. Hypersensitivity below the umbilicus is consistent with a more or less localized or perhaps a diffuse cord lesion. Whatever evidence we had for a cord lesion in the arm condition seems to be in abeyance at the present time. We now have a picture which is primarily referable to the legs, and if there is anything localizing it would seem to be in the lower cord. The brunt of the attack now seems to be borne by the pyramidal tract. A spastic paraplegia is what is indicated by this examination.

Clinically this case might be pernicious anemia with combined system disease. It is interesting that the blood was never characteristic. Dr. Minot was asked to look at the blood and was unwilling to make a diagnosis of primary anemia, although stating that the blood picture was not inconsistent with this disease.

What is the range of combined acid value?

DR. CABOT: This is low.

DR. AYER: This is low and the free hydrochloric is absent.

So we have a blood which gives no evidence of an inflammatory process, which is consistent with a mild anemia, which is not characteristic of primary anemia but which might be primary anemia, a gastric analysis which is quite characteristic of anemia. There is nothing of value in the temperature, pulse or respiration.

One would not expect much change in any spinal cord condition in this short time. If anything there was a tendency toward improvement.

One thinks first of a multiple neuritis. I think especially in the very beginning when she had so many sensory disturbances, with numbness of the hands and arms, and when it disappeared in a short time, again we think of multiple neuritis. We think of the various types of exogenous and perhaps endogenous neuritis. But when the picture cleared up with the improvement in the sensory condition of the arms and left a spastic paraplegia, then one had to admit that it was not neuritis but much more serious and involved the cord.

There is a good deal of discussion about neuritis today. Apparently one can have a typical

peripheral multiple neuritis where only the extremities are involved, where the terminations of the nerve fibres are affected, then clearing up. One may have on the other hand affection of the nerve trunks, we will say the brachial or the sciatic plexus. That is a more severe form of multiple neuritis. And then we may go back further and have a radiculitis, which means that the roots are affected, and when the roots are affected the spinal cord is affected directly or indirectly. So we can speak of a combination that is really a meningomyeloneuritis. In other words, there is a meningitis, there is some inflammation of the cord, and there is also a neuritis.

In infectious influenza, so called, we not infrequently see this picture of what looks like neuritis, and then when we see the whole picture we say, yes, there is a myelitis. As I see it, this picture is perfectly compatible with such a condition, a myelitis with a radiculitis and perhaps a mild meningeal condition going with it. On the other hand we have a good clinical picture for a combined system disease going with a primary anemia.

The subsequent picture is summarized very quickly. I saw this patient recently. From a person who could not walk at all she was walking in such a way that I think no one would stop to look at her to see what was wrong. But when she turned quickly she was thrown off her balance a little, and when one examined her there was a little postural disturbance, the Romberg was slightly positive, and the reflexes were probably slightly pathological.

*She is a dressmaker and she sews, but when she gets tired she finds that she does not hold the needle quite right. It feels awkward. Our examinations show nothing in the arms, so that from the arm point of view she is all right except when tired. From the leg point of view she is almost well. But we find evidence that she has had a disturbance of the spinal cord which fits, to my mind, the picture of either a combined system disease (associated with primary anemia, which we never have demonstrated), or with a diffuse myelitis, or a radiculitis with myelitis.*

It seems a little hard to bring anything else into play. Syphilis must always be considered. It would seem as if we had thrown it out symptomatologically, and no treatment has been given. It could hardly be any tumor of the cord. Multiple sclerosis is the other disease, with syphilis, that we should always consider in such cases. We have nothing in favor of multiple sclerosis. Our diagnosis must lie in combined system disease or in an infectious condition which we will call a myelitis.

She did very well before she was put on liver, so that it is not necessarily liver which has brought her through.

DR CABOT: How do you picture to yourself the changes that have gone on in the cord be-

tween the time when she was at her worst and the present time?

DR AYER: I have had occasion only once to see a good acute myelitis, and that one showed—and other descriptions agree—a grossly soft cord, usually diffuse but more or less localized. In this case it was a combination of pressure and infection. The cord was liquefied and microscopically showed a disintegration of both fibers and cells, particularly the fibers. The motor cells showed swollen bodies and were evidently undergoing degeneration. There was also a certain amount of low-grade aseptic meningitis. I think in a less degree this was the case here. There must have been much physiological disturbance but little destruction, except in the pyramidal tracts and the posterior columns, and the reason it affects these two tracts is that they run the whole length of the cord and are therefore vulnerable over a great distance.

DR CABOT: Have you ever known a case like this to show as much improvement without liver?

DR AYER: Yes. We have had a case only two months ago in the ward, a man who also had a history of infection, who also became worse than she, who had a level about at the clavicles, and without liver treatment the level dropped and finally his legs began to come back. He went out with almost no sensory disturbance, and walking. There we had evidence of an inflammatory process by finding forty-odd cells in his fluid. It probably was not syphilis. I think it was myelitis. From the combined system disease point of view we had last year a woman who did pick up remarkably under liver diet, in whom the diagnosis was quite certain. It was a very striking improvement both with regard to the parasthesiae and with regard to the spasticity.

I have just gone over a series of anemia cases with Dr Richardson. He is pessimistic about the neurological cases. On the other hand he admits that he has seen none go downhill, and he has seen a good many come up.

This patient went out, as I remember it, with both diagnoses. I think that is quite correct. I do not see how we can be sure.

DR CABOT: Isn't your conception of this disease one in which an unknown cause may damage either the blood or the spinal cord or the tongue and the stomach or any combination of these, but which does not need to damage all of them at once?

DR AYER: You mean the primary anemia?

DR CABOT: I do not like to call it pernicious anemia. I like to think of it as a disease which may show the symptom anemia, which may show the symptom myelitis, but is not an anemia or a myelitis itself.

DR AYER: I think so, because we certainly have a number of cases which have the nerve

symptoms for quite a while before the blood picture shows positive

DR CABOT It seems to be very interesting that we had the tongue and gastric symptoms here exactly as we should with an anemia, showing that it is not the anemia that produces these symptoms but the unknown cause that hits at all those organs simultaneously

DR AYER I am rather skeptical about this being that disease I am rather inclined to myelitis, and that I suppose is a toxic disease and quite different from the other This is a reason for bringing it up

A PHYSICIAN To what extent can hysteria simulate this organic disease?

DR AYER Very closely But repeated examinations would certainly not show these findings Hysterical parasthesia is not at all unheard of, but almost always there is complete sensory loss, which this patient never did show and of a glove character, not root and not nerve

distribution In this case the reflexes were different in the two sides, nothing like hysteria I do not think we could possibly confuse this with hysteria

A PHYSICIAN Do you ever get ankle clonus in hysteria?

DR AYER Yes, frequently But you probably would not get it consistently

#### DIAGNOSIS

Combined system disease (without demonstrable primary anemia), or

Diffuse myelitis

#### ERRATUM

In Case 14142 Mar 24, 1928 Dr Allison's discussion should be followed on Page 773 only by the final diagnosis osteomyelitis of the upper end of the femur and hum The heading "X-ray Interpretation December 6" and the paragraph printed below the diagnosis were inserted by an error

# The New England Journal of Medicine

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## RABIES

IN this issue of the JOURNAL appears an article by Dr. Rosenau on "Rabies—The Treatment of Wounds and the Prevention of the Disease." This article is particularly timely. There are still individuals, more especially sentimental dog lovers but including, we regret to say, an occasional physician, who question that rabies is a disease of dogs. Some even go so far as to say that although dogs may have the disease it is never communicated by them to human beings. With two human deaths from rabies in the Commonwealth last year and one so far this year, it scarcely seems that any further discussion of this point is necessary. 826 cases of rabies in animals were reported in 1927, which is the largest number ever reported in this State. Efforts at control by the Division of Animal Industry of the Department of Conservation and the Department of Public Health by quarantine of licensed dogs and destruction of the stray dogs were not supported by public opinion so far as available evidence is at hand.

Evidently then, with the present temper of the people, even with rabies epidemic in Eastern Massachusetts, we must fall back on the Pasteur preventive treatment of exposed individuals. Dr. Rosenau has discussed at length and gives figures on one of the newer modifications, namely, the Semple method. This has met with favor because of the relative infrequency of paralytic complications, it is economical and simple and the virus may be preserved for shipment. It is apparently quite as efficient and fully as safe as any other modification of the Pasteur treatment.

The important question in connection with the prevention of rabies in humans is when to use prophylactic treatment. The State does not furnish the treatment. If the individual is able to pay, obviously he should pay any costs in connection therewith. If he is unable to pay (and the local board of health determines this fact), then treatment is furnished by the local board of health. Whenever an individual is bitten by a known rabid dog, treatment should be started at once. In the article referred to Dr. Rosenau treats in detail the proper procedure in regard to the various situations that may be encountered in regard to the biting animal. Physicians, many of whom may not have been faced with these problems in recent years, should familiarize themselves with these situations in order that when they meet them they may advise promptly and accurately. As in two recent deaths when inoculations were refused, for the physician to say that he discussed treatment is not enough. He must use all the powers of persuasion that he possesses to overcome the widely disseminated propaganda of ridicule. Health authorities will reinforce him in individual cases if he but asks it.

It is the very effectiveness of the prophylactic inoculations that gives the appearance of credence to such propaganda. Without them the many hundreds of persons who would have died last year would shock the public out of listening to the phylanderings of pseudo science. Let the physicians feel a responsibility to educate their clientele in this matter that a public opinion may be developed which must form the basis of concerted community effort, which will rid our State of this disease as has been done in Australia, England, Norway, Denmark and Sweden.

## DR EVARTS A. GRAHAM'S VISIT TO MASSACHUSETTS

THE medical profession is shortly to have the opportunity of hearing Dr. Evarts A. Graham, a distinguished American Surgeon, who through his knowledge of chemistry, skill in the technique of difficult operative procedures and spirit of research has contributed to an unusual degree to medical and surgical progress.

In the field of thoracic surgery he has, among other contributions, devised a successful method of operative treatment of chronic lung suppura-

tion by cauterizing pneumonectomy. He has advanced the knowledge of the effects of open pneumothorax by showing that the resulting danger depends not only on the size of the opening, but on the vital capacity. This conception is of practical importance in many aspects of thoracic surgery. It has been of especial value in leading to the abandonment of early open drainage in acute empyema complicating pneumonia, and the substitution of closed methods of evacuation at a time when the vital capacity is so low that an opening of any size may be fatal. For his work in open pneumothorax he was awarded the Samuel D. Gross prize in Surgery for 1920.

The Trudeau Society extends a cordial invitation to hear him speak on Monday evening, June 4, at 8:15 in John Waite Hall, the subject being "Remarks on Pulmonary Suppuration."

Dr. Graham's investigations have not been confined to surgery. He is most widely known for the introduction of cholecystography in 1924, by the use of a radio opaque substance permitting X-ray visualization of the gall bladder. The "Graham test" of gall bladder function is the most important addition to the methods of diagnosis of gall bladder disturbance since the advent of the X-ray in its application to medicine and surgery.

We welcome the opportunity to hear Dr. Graham's Shattuck Lecture on "Some Functional Tests and Their Significance" at the meeting of the Massachusetts Medical Society at Worcester Tuesday evening, June 5.

### The Immediate Need of a Home for The Massachusetts Medical Society

THE action of the Boston Medical Library in its votes reported in the JOURNAL of last week gives promise of a brighter future for the medical interests of Massachusetts. If the Library is now ready to join with the Massachusetts Medical Society in providing quarters for both organizations and for such other allied interests as may properly unite with them, a step will have been taken which may be of great public benefit. Any such movement looking toward improved public health may expect financial support from outside the medical profession. Such outside support is essential to the success of any large plan.

As yet however no concrete plan has been suggested about which those interested in any great movement in this direction may rally. It may require several years before the various organizations of the State which may advantageously be housed in one building can be brought together to present their needs in a convincing way to those who must give the necessary funds.

Meantime the Massachusetts Medical Society must raise from its own members and loyal friends funds for its own quarters. To this the Society is committed. Those who give for this purpose may feel sure that the Council will look

into the future and will take no step today which will prevent more progress in subsequent years. The Society is the most important medical organization in the State. It will welcome the cooperation of other organizations which will work in common for the best interests of the whole Commonwealth.

### THE COST OF MEDICAL CARE

THE economic features of medical practice both in application to the recipient of service and the practitioner have been subjects of interest and discussion in recent years. The burden of illness imposed by the immediate cost and further invasion of earning capacity of the sufferer involving diminution of the income upon which his dependents rely for sustenance are too often serious handicaps in the struggle for existence.

The conditions are so often demonstrated that they are accepted as a feature of life. Considerable study has been given to the problems involved and many organizations are trying to meet the needs of individual cases. The fundamental causes of inability to meet the cost of illness are however very imperfectly understood.

The announcement of the formation of a body dedicated to the task of placing the underlying causes before the people has aroused much interest and editorials have appeared in many of the leading newspapers of the country commending this undertaking.

The committee in charge of the studies is composed of representatives of various types of social agencies, public health organizations and physicians. A certain amount of money has been given for inaugurating these studies, plans have been formulated, expert investigators put at work and the committee is meeting regularly to supervise and direct its employees.

The available funds, however, are only sufficient to make a beginning. At least five years of careful intensive study will be necessary in order to bring definite information to bear on these complicated problems.

How will the necessary expense in extension of the early efforts now underway be met?

This country stands as the wealthiest among nations. Thousands of individuals have more money than can be advantageously used for personal needs and great wealth is concentrated in organizations founded on the purpose of serving humanity.

Adequate support for these studies will be forthcoming if the appeal is convincing, but those in charge are warranted in demanding that money will be well used.

The medical profession is under the obligation of satisfying itself of the standing of those who are committed to this task because it has a definite interest in the whole scheme and especially in that part of the program which is concerned in the practice of medicine.

The distributors of funds designed for the

betterment of humanity will ask if the medical profession endorses the plan. A united profession will make the work of the committee much easier and medical societies may very properly give evidence of approval by such contributions as may be reasonable.

It is proposed to ask state and other medical societies to appropriate money for the use of the committee. Such contributions may not be large but they will stand as demonstrations of endorsement and thereby encourage more liberal endowment by the more wealthy bodies.

### THIS WEEK'S ISSUE

CONTAINS articles by the following named authors

WHITE, FRANKLIN W. S.B., M.D. Harvard, 1895. Instructor in Medicine, Harvard, Visiting Physician, Boston City Hospital. His subject is "Studies of the Redundant Colon." Page 783. Address 322 Marlborough Street, Boston.

ROSENAU, M. J. A.M., M.D. University of Pennsylvania, 1889. Professor of Preventive Medicine and Hygiene, Harvard Medical School, Professor of Epidemiology, Harvard School of Public Health. His subject is "Rabies, The Treatment of Wounds and Prevention of the Disease." Page 787. Address Harvard Medical School, Boston.

QUINCY, JOSIAH E. B.S., M.D. Northwestern University, 1921. Clinical Assistant Massachusetts Eye and Ear Infirmary, Associate Staff, Faulkner and Children's Hospitals. His subject is "Bilateral Cavernous Sinus Thrombosis." Page 791. Address 270 Commonwealth Avenue, Boston.

WILLIS, A. MURAT. M.D. Medical College of Virginia, 1904. F.A.C.S. Professor of Surgery, Medical College of Virginia, Chief Surgeon to Allied Hospitals, Richmond, Va., Senior Surgeon to Johnston-Willis Hospital, Richmond, Va. His subject is "The Mortality in Some of the Common Surgical Conditions." Page 794. Address Johnston-Willis Hospital, Richmond, Va.

PARDEE, KATHARINE. B.A., M.D. Johns Hopkins, 1918. Fellow in Medicine Mayo Clinic, 1920-23. Assistant Physician, Smith College, Northampton, Mass., 1924-27. Address 151 West 105 Street, New York City. Associated with her is

GORDON, FAITH FAIRFIELD. S.B., M.D. Boston University, 1923. Assistant to the Medical Director at Smith College. Address 65 New South Street, Northampton, Mass., and

RILEY, CATHRYN V. M.D. Johns Hopkins Medical School, 1922. Address 2141 LeRoy Place, Washington, D. C. Their subject is "Vincent's Infection." Page 796.

CHEEVER, AUSTIN W. A.B., M.D. Harvard, 1914. Chief of Service Skin and Syphilis Department of the Boston Dispensary, Dermatologist at the Cambridge Hospital and the Brookton Hospital. His subject is "Progress in Syphilis, 1927." Page 799. Address 472 Commonwealth Avenue, Boston.

EMERSON, KENDALL. A.B., M.A., M.D. Harvard, 1901. F.A.C.S. Chief of the Surgical Service and Orthopedic Surgeon Memorial Hospital, Worcester, Mass., Member of the New England Surgical Society, President of the Massachusetts Tuberculosis League. His subject is "President's Report." Page 805. Address 21 High Street, Worcester, Mass.

KIERNAN, FRANK. A.B., Executive Secretary Massachusetts Tuberculosis League. His subject is "Annual Report of Executive Secretary." Page 806. Address 1149 Little Building, Boston.

JOHNSON, ANNA. Graduate of State Normal School, Lowell, Mass. Formerly Executive Secretary Lawrence Tuberculosis League, now Educational Secretary Massachusetts Tuberculosis League. Her subject is "Educational Report." Page 811. Address 1149 Little Building, Boston.

### The Massachusetts Medical Society

#### ANNUAL MEETING OF THE COUNCIL

THE Council will meet in the Ball Room of the Hotel Bancroft, Worcester, June 5, 1928, at 12 o'clock, noon.

#### BUSINESS

- 1 Reading minutes of last meeting in abstract
- 2 Reports of Standing Committees in order of appointment (See inside front cover of official program for committees and their order)
- 3 Reports of Special Committees, namely Committee of Nine, Committee on Insurance, Committee on New England Medical Council, Committee on Clinics, Committee on Woman's Auxiliary in Massachusetts, Committee on a Permanent Home for the Society
- 4 Approval of Revised By-Laws, as amended
- 5 Election of Officers and Orator for 1928-1929, by ballot
- 6 Appointment of Standing and Special Committees for 1928-1929, on nomination by the President
- 7 Incidental business

WALTER L. BURRAGE, *Secretary*  
Brookline, May 29, 1928

The usual Cotting Lunch will be combined with a Buffet Luncheon to Fellows that will be served immediately after the Council meeting. Councilors are reminded to sign one of the two attendance books before the meeting.

## BOSTON MEDICAL LIBRARY

### PHYSIOTHERAPY

AMERICAN medicine of the last thirty-five or forty years has been characterized by "therapeutic nihilism." Convinced of the futility of much of the old school dosing and equally skeptical of the reaction from that, the profession has followed its own individual tastes to a large extent in the matter of therapeutics. The public could not be relegated to a drugless practice but the habit of prescription writing became one of the lost arts. Manufacturing Chemists supplied the lack of compound prescriptions by flooding the market with proprietary preparations and so the atavistic desire of the human being for tangible methods of routing disease from his system was satisfied. So far as professional interest in the subject is concerned Physiological Chemists and Pharmacologists have been active particularly along the lines of specific serum therapy.

Since the World War in America there has been a pronounced revival of interest in physiotherapy. This is of course not new, for in the days of Hippocrates and the Aesclepiadae there were many Institutes in Greece and elsewhere at which baths, massage and physical culture were strongly emphasized. Patients were brought to these places for prolonged treatment and they were invariably localities having a reputation for a salubrious climate or waters possessed of medicinal qualities. Heliotherapy was also employed. Americans have been too busy to give up the time to these measures. We have also been too wasteful of energy and even of health and life itself. It has taken a realization of the need for taking better care of the employed in industry that has really forced us to take cognizance of what has been the custom in the industrial countries of Europe for many years. The Great War has played its part as well. The medical profession as a whole, up to that time, took but little interest in the matter and opposition to the charlatan character typical of much of the practice tended to keep even the more intelligent members of the profession away from its study or practice. There was no instruction along these lines provided in the schools. Visitors to Europe brought back from time to time accounts of the Institutes existing there, in almost every industrial center of any size, subsidized by Industry for the purpose of restoring to productive activity at the earliest possible moment those who had fallen victims to accident or compensable illness.

We are making some attempts at a very poor imitation of the work of these foreign Institutes. We are still adhering to many questionable, old methods and adopting without adequate and convincing tests as to efficacy, every new device that comes along and are consequently in no position to say how much good is being done and indeed are still subject, far too justly, to the

accusation of commercialism in many of our methods, but still we have headed in the right direction and eventually, when there has been aroused a wider professional understanding of what real worth resides in massage, hydrotherapy and heliotherapy, combined with what may yet be more positively asserted to be had from electrotherapy, we shall have added a valuable asset to the physician's armamentarium. Education in the Medical Schools, in the Department of Therapeutics, is an essential step toward attaining this goal. In pursuit of this idea a small book by Thomas Brown published in Albany in 1817, entitled the "Ethereal Physician" will be found amusing and entertaining. Included in it is an extract from a "Treatise on Electricity" by Tiberias Cavallo written in 1785. This author points to the early use of the knowledge of electricity as a means for the treatment of disease. This small volume of Brown's is in the Library and represents a type of the early literature on physiotherapy which has attained a volume now altogether astonishing and as yet for the most part so chaotic in its arrangement and so often unscientific and extravagant in its claims that it is difficult to cull the wheat from the chaff.

## MISCELLANY

### DINNER TO DR. WILINSKY

A memorable event took place on Tuesday May 22 at the Copley Plaza Hotel when a number of the friends of Dr. Charles F. Wilinsky assembled at a dinner given in his honor and to celebrate his acceptance of the directorship of the Beth Israel Hospital.

Preceding the dinner a blessing was asked by Rabbi Samuel J. Abrams. Commissioner Francis X. Mahoney in whose department Dr. Wilinsky has served as director of the Boston Health Units, introduced the toastmaster of the evening, Dr. George H. Bigelow, Commissioner of Public Health of Massachusetts. Dr. Bigelow enthusiastically undertook his duties and a rather long program was brilliantly and agreeably upheld by his wit and satire.

Dr. John W. Bartol, President of the Boston Health League, as the first speaker traced the development of Dr. Wilinsky as practitioner, school physician and health official. Dr. Bartol was followed by the Reverend Father O. Conor, Director of the Catholic Charitable Bureau, who told of his experiences with Dr. Wilinsky in establishing the health units and bore witness to his intelligence, his humanity and his tact. The other speakers were Judge A. K. Cohen, President of the Federated Jewish Charities; Mr. Homer N. Calver, Executive Secretary of the American Public Health Association; Dr. Alexander S. Begg, Dean of the Boston University School of Medicine and Chairman of the Committee on Public Health of the Boston Chamber of Commerce; Professor Milton J. Rosenau, who told of his experiences with Dr. Wilinsky in the Holy Land; Dr. Eli C. Romberg, representing the Jewish physicians supporting the Beth Israel Hospital; Dr. Harry Linenthal, Chief of the Medical Staff, who stressed the value of the hospital as an agency of public health; and Mr. Albert A. Ginsberg, President of the Board of Trustees.



The Honorable James M. Curley, former Mayor of the city, then presented Dr. Wilinsky with a beautiful hall clock on behalf of his friends. Dr. Wilinsky, in replying, told many of the details of his work in the field of public health, and promised that all his ability would be turned towards making the Beth Israel a hospital of the first rank.

A reportorial account of this dinner gives no information and no idea of its real significance. Its real significance lies in the fact that on an evening last week physicians, lawyers, clergymen and business men, Jews and Gentiles, Catholics and Protestants united in doing honor to a Jewish physician of outstanding merit—a man who is an honor to his profession and who has given unstintingly of himself in the interests of the public. He has been elevated to a position and promoted to a task of great responsibility in his profession and the *JOURNAL* joins with his other friends in congratulating him on his past achievements and in wishing him well for the future.

#### A COURSE IN HEALTH EDUCATION

The first course in Health Education for workers in Continuation Schools is to be offered by Teachers College, Columbia University, in the fall of 1928.

According to the announcement made, Professor Wood, Professor Rowell, Miss Phelan, and additional special lecturers will give instruction in this course. When interviewed recently Professor Wood said: "The opportunities for pioneer work in health programs in continuation schools are often unappreciated. Working adolescents must be helped to understand their health possibilities and limitations, and they should be taught simple practicable measures for attaining and maintaining their optimum health. The habits, attitudes, and knowledge needed for working adolescents are specific—it is not only a problem of living healthfully but of working healthfully. Every teacher in the continuation school has a definite contribution to make to the health and efficiency of these adolescents, and the contribution of every teacher is essential. The time in continuation school is brief and every possible opportunity for health teaching must be used with due consideration of other educational needs."

The new course is planned to meet the specific needs which have been clearly recognized in a thorough constructive study now being made in the New York City Continuation Schools and this course is to be given at the request of the Committee directing that project. Practical problems of the adolescent worker will be studied. Among subjects to be considered are Safety and First Aid in the job, posture and the job, nutrition for the worker, etc.

In addition it should be known by those interested that Professor Thomas D. Wood was a member of the committee of the Child Bureau in Washington some years ago, which worked out Physical Standards for Working Children. Professor Rowell was Director of the Health Program of the New Bedford schools, and as such had the organization and direction of the health program in the Continuation Schools. Dr. Rowell has also written many articles on this subject. Both Dr. Wood and Dr. Rowell have been active in the demonstration now under way in the New York City Nutrition study of working adolescents under the appropriation of the committee on Scientific Research of the American Medical Association and have published numerous

articles in professional and medical magazines.

This course is approved by the New York Board of Examiners, and accepted for credit toward a teaching license for continuation schools. John D. McCarthy, Director of Health Education for the New York City Schools, will also be one of the lecturers.

#### VACCINATION IN ORDER

The outbreak of smallpox in Middletown, Connecticut, last winter has been followed by a few cases in Bristol, Connecticut this month.

Massachusetts has a few cases. Reports at hand do not indicate a common source of infection.

A conflagration usually starts as a little flame. A smallpox epidemic starts with a few cases.

Up to May 23, four cases had been found in Boston. Vaccinations will be carried on between the hours of 10 to 12 in the forenoon and from 7 to 9 P. M. daily at Health Units of the City of Boston Health Department.

It is time for doctors to call attention to the wisdom of vaccination of all persons who have not been immunized within recent years.

#### RÉSUMÉ OF COMMUNICABLE DISEASES IN MASSACHUSETTS

APRIL 1928

##### GENERAL PREVALENCE

The total number of cases of communicable diseases reported for April was the highest in recent years.

This month recorded the highest reported incidence of measles for any April since the disease was made reportable in 1893. This is the third consecutive month in which this event has occurred. At the present rate the yearly incidence will exceed the high record year of 1920.

The reported incidence of lobar pneumonia, scarlet fever, chicken pox, mumps, anterior poliomyelitis, diphtheria and non-pulmonary tuberculosis was within endemic limits.

The incidence of influenza was low, and that of German measles the lowest since 1920. A new low April record has been established for pulmonary tuberculosis. For the year to date, 8 per cent. fewer cases have been reported than for the corresponding period in 1927, in which year a new low record was established.

For the fifth consecutive time a new low monthly typhoid fever record has been reached. In February, in March, and again in April a new low record for any month in any year was recorded. There were no deaths for typhoid fever recorded in March of this year. This is the first time in the history of the Department that a month has gone by without a typhoid fever death.

##### RARE DISEASES

*Anterior poliomyelitis* was reported from Lowell, 1; Lynn, 1; Malden, 1; Natick, 1; Quincy, 1; Swampscott, 1; total, 6.

*Anthrax* was reported from Malden, 1; total, 1.  
*Dog bite requiring antirabic treatment* was reported from Belmont, 1; Boston, 9; Chelmsford, 3; Lowell, 20; Milford, 1; Newton, 3; North Andover, 1; Quincy, 1; Revere, 7; Springfield, 1; Taunton, 1; Winthrop, 2; total, 50.

*Encephalitis lethargica* was reported from Boston, 3; Lynn, 2; Woburn, 1; total, 6.

Epidemic cerebrospinal meningitis was reported from Brockton 1 Chelsea 1 Framingham 1 Lynn 1 Malden 1 Medford 1 Quincy 1 total, 7

Leprosy was reported from Boston 2 total, 2

Pellagra was reported from Northampton 1 total, 1

Septic sore throat was reported from Boston, 6, Fall River, 1 Granby 1, North Adams 1 Ply mouth, 1 total 10

Tetanus was reported from West Springfield 1 total 1

Trachoma was reported from Boston 2 Cambridge 1 Chelsea 4 Lowell 1 total 8

MONTHLY REPORT OF CERTAIN COMMUNICABLE DISEASES.

DISEASE	Cases in Entire Population				Case Rates per 100,000 Pop.		
	Apr. 1928	Apr. 1927	Prosodemic Index	Epidemic Index	Apr. 1928	Apr. 1927	Expected Rate***
ALL CAUSES	12,437	9,090	-	-	287.6	212.7	-
Ant Poliomylitis	6	4	10*	.6**	.1	.1	.2
Diphtheria	338	577	394*	.9**	7.8	8.8	9.1
Measles	6,436	1,406	5,657*	1.1**	148.8	32.9	130.8
Pneumonia, Lobar	663	511	539*	1.2**	15.3	12.0	12.5
Scarlet Fever	1,129	2,015	1,313*	.9**	26.1	47.2	30.4
Tuberculosis, Pul.	431	446	402*	1.1**	10.0	10.4	9.3
Typhoid Fever	11	26	19*	.6**	.3	.6	.4
Whooping Cough	823	625	979*	.8**	19.0	14.6	22.6
Chicken Pox	655	971	-	-	15.1	22.7	-
German Measles	73	92	-	-	1.7	2.2	-
Influenza	84	65	-	-	1.9	1.5	-
Mumps	998	1,720	-	-	23.1	40.3	-
Tuberculosis, O. F.	88	68	-	-	2.0	1.6	-

\* This Index is an attempt to estimate the number of cases based on the trend during the past years which can be expected to occur, and is for the purpose of comparison with the number of cases which actually did occur.

\*\* This ratio expresses how prevalent the disease is compared with the index mentioned above; 1.0 indicates that the actual number of cases equals the expected number. A larger number means a greater prevalence, and a smaller number a lesser prevalence than expected. Thus, 2.0 would indicate twice the expected number of cases, and .5 half the expected number of cases. The method used to determine the indices is described in the August 18, 1927 issue of the Boston Medical and Surgical Journal.

\*\*\* Calculated from the Prosodemic Index.

ASSIGNMENT TO DUTY AT MARINE HOSPITAL  
CHELSEA, MASS

Surgeon H V Stroupe has been relieved from duty with U S Coast Guard Charlestown Navy Yard Mass and assigned to duty at the Marine Hospital Chelsea Boston Mass May 5 1928

INCREASE OF LIFE SPAN

Professor Ira V Hiscock of the Department of Public Health of the Yale School of Medicine in addressing the National Conference of Social Work at Memphis this month pointed out that the life expectancy of the baby of today is 19 years greater than that of the infant born in 1850 Professor Hiscock states that, if existing knowledge of measures for health promotion and disease prevention were generally applied at least ten years more might be added to the average life span

NEW JERSEY'S INFANT DEATH RATE

Dr Elizabeth C Tandav director of the Statistical Division of the Childrens Bureau has recently stated that New Jersey with an infant death rate of 35.8 per 1000 live births during the period 1921-1926 had the lowest rate of any one of 10 eastern States and the lowest for the United States birth registration as a whole

NATIONAL MEDICAL ASSOCIATION OF CHINA

The National Medical Association of China has recently issued on the occasion of the Seventh Biennial Conference an interesting and valuable medical guide serving as a directory of medical institutions and practitioners in that country In it are included a medical map of Peking a list of Chinese physicians an illustrated description of the various medical institutions in Peking and in China as a whole classified according to their major activities in public health leading institutions and hospitals

MASSACHUSETTS EYE AND EAR INFIRMARY

The report of the Managers of The Massachusetts Eye and Ear Infirmary for 1927 has to do mostly with the physical changes and improvements which have taken place in the institution during the year Most important has been the completion and occupation of the new building connecting the Infirmary with the Out Patient wing of the Massachusetts General Hospital By this addition greater and improved outpatient facilities have been added and space in the Infirmary has been freed for such innovations as the Howe Laboratory of Ophthalmology an enlarged nurses dining room a rest room for women clerks and better accommodations for the administrative office Great and much needed improvements in the childrens ward have also been made possible

COMPARISON OF DISEASE INCIDENCE IN CONNECTICUT  
WITH 1927 AND SEVEN YEAR AVERAGE  
WEEK ENDING MAY 12

	1928				Average cases reported for week corresponding to May 12 for past seven years.	1927			
	Wk. ending Apr 21	Wk. ending Apr 28	Wk. ending May 5	Wk. ending May 12		Wk. ending Apr 23	Wk. ending Apr 30	Wk. ending May 7	Wk. ending May 14
Actinomycosis	-	-	-	-	-	-	-	-	-
Anthrax	-	-	-	-	-	1	-	-	-
Botulism	-	-	-	-	-	-	-	-	-
Cerebrospinal Men	-	3	2	1	1	1	-	1	-
Chickenpox	85	68	65	96	60	44	78	112	96
Conjunctivitis Inf	1	8	5	-	5	1	-	1	-
Diphtheria	24	29	23	24	34	31	26	22	20
Dysentery, Amoebic	-	-	-	1	-	-	-	-	-
Dysentery, Bacillary	-	-	-	-	-	-	-	-	-
Encephalitis, Evid	1	1	1	2	-	1	-	-	-
Favus	-	-	-	-	-	-	-	-	-
German Measles	16	17	18	23	28	11	17	34	10
Hookworm Infection	-	-	-	-	-	-	-	-	-
Influenza	5	17	85	71	6	1	3	4	3
Leprosy	-	-	-	-	-	-	-	-	-
Malaria	-	-	-	-	-	-	1	1	-
Measles	363	354	370	381	232	58	50	51	58
Mumps	196	210	104	151	42	38	53	45	36
Paratyphoid Fever	-	-	-	-	1	-	1	-	-
Pneumonia (Broncho)	60	46	45	62	34*	38	26	26	34
Pneumonia (Lobar)	62	59	71	70	36	55	44	75	34
Poliomyelitis	-	-	-	-	-	-	1	-	-
Scarlet Fever	47	77	66	98	90	106	99	103	105
Septic Sore Throat	-	-	-	1	2	2	6	3	3
Smallpox	-	-	5	-	3	-	-	-	-
Tetanus	-	1	-	1	-	-	1	-	-
Trachoma	-	-	-	-	-	-	-	-	-
Trichinosis	-	-	-	-	-	-	-	-	-
Tuberculosis (pul.)	32	34	36	27	33	22	39	36	36
Tuberculosis (o f)	13	6	9	7	3	2	7	6	6
Typhoid Fever	1	-	1	2	6	-	1	1	-
Typhus Fever	-	-	-	-	-	-	-	-	-
Whooping Cough	114	115	113	105	51	20	31	60	67
Gonorrhoea	45	21	37	39	22	47	8	20	15
Syphilis	39	68	36	35	28	32	14	16	12

\*Average for three years. Made reportable January 1, 1925. Remarks No cases of cholera, Asiatic, glanders, plague, rabies in humans and yellow fever during the past seven years.

## RECENT DEATHS

**SUMNER**—DR. HARRY HERBERT SUMNER, of Lowell, died on Rutland May 20 1928 aged 56

Dr Sumner was a graduate of Baltimore Medical College in 1901 and settled in practice that year, in Lowell joining the Massachusetts Medical Society. He is survived by his widow, who was Miss Edith West.

**WHITE**—DR. LEON EDWARD WHITE a specialist in diseases of the ear, nose and throat, died at his home in the Chestnut Hill section of Brookline May 18, 1928, at the age of 60

He was a native of Barton, Vt., born July 30 1867 the son of Orra A and Emily B (King) White. He studied at Dartmouth and following his graduation in 1890 he took the medical course at the college and was graduated from this three years later. Early in his career Dr White practiced for a few years in Roxbury. During 1897 and 1898 he was house surgeon at the Massachusetts Charitable Eye and Ear Infirmary, and from 1898 to 1905 he was assistant surgeon there. For several years he was otologist to St Elizabeths Hospital.

Besides being a fellow of the American Medical Association and the Massachusetts Medical Society, he held membership in the American Academy of Ophthalmology and Otolaryngology, the American Laryngological Association, the American Laryngological Rhinological and Otolological Society, the American Otolological Society and the New England Otolological and Laryngological Society.

He is survived by his widow G Maude White, formerly of Wakefield and by his son Dr Leon Edward Jr who has shared his father's Boston office in the practice of the same specialty and by a daughter Dr Priscilla White of Audubon Road Boston.

**STONE**—DR. MOSES CORNELIUS STONE, a retired Fellow of the Massachusetts Medical Society died at his home in Wellesley May 19, 1928, at the age of 86. He leaves a widow, a son and two daughters. He was a graduate of Bowdoin College in the class of 1865 and of New York University Medical College in 1868. He was an active member of the Bowdoin Club of Boston.

## OBITUARY

### HIDEYO NOGUCHI M.D.\*

Dr Hideyo Noguchi of the Rockefeller Institute for Medical Research died at Accra West Africa Monday May 21 1928.

Dr Noguchi gave his life for humanity in a scientific endeavor to discover the relation between South American and African yellow fever. The results of the bacteriological studies made by him in South America proved inapplicable to yellow fever as it exists in West Africa. Although not himself in the best of health and at his advancing age he insisted against the advice of many friends in undertaking the arduous expedition. His work in Africa was completed and he planned to sail for New York on May 19 when a few days before he was himself stricken with yellow fever. Dr Noguchi had weighed well the dangers of the undertaking and went on what unhappily proved the last of an extraordinary number of successful scientific expeditions prepared

to make the extreme sacrifice. Fortunately, the results of his studies will not be lost. Others will take them up where he was compelled to leave them.



HIDEYO NOGUCHI M.D.

although it is too much to expect that anyone can carry them to final completion and publication as brilliantly as Dr Noguchi himself had he been spared would have done.

Dr Hideyo Noguchi was born on November 24, 1876 at Inawashiro Yama County Fukushima, Japan. He studied medicine at the Tokio Medical College from 1893 to 1897 and received the license to practise medicine from the Japanese Government in 1897.

From 1898 to 1900 he was assistant in the Government Institute for Infectious Diseases Tokio and during this period he held a lectureship in bacteriology at the Tokio Dental College.

Dr Noguchi came to the United States in 1900 and joined the pathological staff under Dr Simon Flexner of the University of Pennsylvania. He remained at the University of Pennsylvania until 1903, having been designated research assistant to the Carnegie Institution of Washington and then continued his studies at the Statens Serum Institute in Copenhagen under Dr Madsen. In 1904 at the founding of the laboratories of the Rockefeller Institute in New York, he joined the original staff of that institution and became one of its original members. This title he held at the time of his death at Accra West Africa of the after-effects of an attack of yellow fever.

Dr Noguchi was awarded a titular professorship by the Department of Education of the Imperial Japanese Government in 1911. He was the recipient of many honorary degrees including the Ph.D. degree of the Imperial University of Tokio in 1914. In 1923 he was elected to membership in the Imperial Academy of Japan and in 1924 he was awarded the medal of the Society of Japanese as one of the ten greatest Japanese. Among the institutions conferring honors on him are Yale and Brown Universities in the United States and the Sorbonne in Paris. Numerous honors have been conferred upon him by various South American countries.

where he worked on yellow fever. In 1921 he received the John Scott Medal from the City of Philadelphia. He was also a chevalier of the Legion of Honor, a Knight of the Royal Order of Isabella of Spain, of the Royal Order of Dannebrog (Denmark), and of the North Star (Sweden). In 1915 he received the Emperor's Medal and Premium from the Imperial Academy of Japan and the Order of the Rising Sun was conferred upon him. He is a member of many scientific societies in the United States and in foreign countries.

Dr Noguchi was a distinguished bacteriologist and was ranked among the most eminent of all time in that field. His earlier scientific work was on the biology of the venoms and antivenins, the Carnegie Institution of Washington publishing his monograph on Snake Venoms in 1909. Later he studied with extraordinary success the bacteriology of the spirochetes, a number of which he cultivated artificially for the first time. Dr Noguchi was the first to demonstrate *Treponema pallidum* in the brain of paretics and to transmit syphilitic infection to rabbits by means of brain tissue from persons succumbing to paresis. In 1915 he first cultivated a bacteria free vaccine virus in the tissues of rabbits, an accomplishment of great practical value in providing a pure virus for purposes of vaccination. In 1918, Dr Noguchi served on the Yellow Fever Commission sent by the International Health Board of the Rockefeller Foundation to Guayaquil, Ecuador, and it is noteworthy that he lost his life while investigating yellow fever in West Africa for the Rockefeller Foundation, to which he was loaned by the Rockefeller Institute.

In recent years Dr Noguchi has isolated the micro-organism (*Bartonella bacilliformis*) from the blood of fatal cases of Carrion's disease (Oroya fever) and the associated skin nodules, *verruca peruana*, of Peru. He was able to reproduce the human disease in monkeys by means of the cultures obtained. This achievement settled the long disputed problem of the relation of Oroya fever to verruga.

During 1926 Dr Noguchi cultivated from the eyes of American Indians suffering from trachoma a bacillus which reproduces trachoma in *rhesus* monkeys and in chimpanzees. Through this accomplishment the much mooted question of the nature of trachoma has been solved.

In the death of Dr Noguchi bacteriological science has lost one of its most brilliant and original investigators and the Rockefeller Institute one of its most eminent scientific workers and one of its most charming and deeply respected members.

In 1911 Dr Noguchi married Mary Dardis who survives him.

## CORRESPONDENCE

### OFFICIAL ACTIONS BY THE BOARD OF REGISTRATION IN MEDICINE

As a result of the meeting of the Board of Registration in Medicine held May 24 1928 the following actions were taken:

Drs Peter Kane and Francis F. Henderson—Case laid on the table until the next meeting of the Board.

Dr Everett D. Hooper—Registration revoked. Involved in abortion.

Dr Joseph N. Pelletier—Case placed on file.

Dr Philip Nicol—Case placed on file.

FRANK M. VAUGHAN, Secretary

## THE CAUSE OF HEART SOUNDS

61, Walter Road, Swansea, Wales,  
March 31st, 1928

To the Editor, THE NEW ENGLAND JOURNAL OF MEDICINE

Dear Sir,

First of all I wish to offer you my best wishes when starting your second 100 years of existence, and I trust that it will be a very happy as well as a very useful period.

Secondly I desire your help to try and determine definitely the cause of the heart sounds, because I feel that unless we are able to know how the normal sounds are produced it is quite impossible to satisfy ourselves as to the causation of the abnormal sounds.

It is now nearly a hundred years since the heart sounds were first recognized or at least considered to be of clinical value, and this was brought about as the result of Laennec's discovery of the stethoscope, and about ninety years ago there was published by Lea and Blanchard of Philadelphia a book called 'Watson's Practice of Physic' in which the author tells us: 'Respecting the physical causes of these natural sounds, there have been much discussion and research.'

Watson proceeds to tell us that 'I have no doubt that the second sound is produced mainly, if not altogether, by the sudden shutting of the flood gates placed at the mouths of the two great outlets of the heart. There is no other tenable mode of accounting for the sound.'

As to the first sound the author says 'chiefly it consists of the sound that results from the muscular contraction of the ventricles.'

The dogmatic teaching of those days has become the tradition of to-day, but I feel it is time that the whole question should be reconsidered in order that we may be in a position to draw right conclusions from our auscultations.

May I point out that a muscle when it contracts produces no sound, and therefore the ventricular contraction cannot be the cause of the first sound. Even if the muscle were the cause of the sound, we ought in pericardial effusion to have that sound conducted most readily across the fluid whereas no such conduction takes place.

As to the cause of the second sound, I feel we are too ready to think that the thin valvular flaps are able to strike together with such force as to cause this sound. These flaps simply move in fluid and with that fluid and not in air, consequently their vibrations if any must be so restricted as to be unable to give rise to a sound. As everybody knows it requires at least fifty vibrations per second before one is able to hear any sound, and then only a deep bass one under such circumstances these fluid enveloped flaps cannot possibly vibrate even fifty times a second, whilst after their destruction when they cannot come into contact the sound is intensified into a murmur.

In connection with the Auscultatory method of taking the blood pressure we are told that Gallavardin and Barblér 'have established two zones in the curve of sound: one caused by whorls in the blood current and another composed of sounds originating in the vessel wall.' I ask in all seriousness how can these sounds owe their origin to the vessel wall? and as to a sound being caused by a whorl a mere

reference to a dictionary will suffice to expose the foolishness of such an explanation i e, if words mean anything

Personally I think that the sounds of the heart are due to the moving fluid in the pericardium, and they can be easily reproduced by water in a small rubber balloon. In support of my theory I would like to draw attention to the fact that it is the same energy which passes up the tube of a stethoscope to produce the sounds as that which passes up the tube of a cardioscope to produce the cardiac curves and if as in pericardial effusion the fluid accumulates its movements become more restricted as a consequence no sounds are produced and also no curves are formed on the cardioscopic paper

Yours very truly

C A STEPHENS M.D.

*Consulting Cardiologist King Edward VII  
Welsh National Memorial Association  
for the Treatment of Tuberculosis*

#### COMMENT ON THE LETTER FROM DR C A STEPHENS

The mechanism of the production of heart sounds and murmurs has been the subject of study for many years and there seems little or no doubt that the sounds are produced as follows

The first sound of the heart is caused by the combination of two effects muscular contraction and the closure of the mitral and tricuspid valves

The second sound of the heart is produced by the closure of the pulmonic and aortic valves

The third sound of the heart, which is a normal event, sometimes accentuated is probably produced by the opening of the mitral and tricuspid valves

That muscular action can produce sounds is easily demonstrated. For example if one places the stethoscope over any superficial muscle in the body and contracts this muscle a definite fairly loud sound is the result. If the muscle is kept contracted there is a continuous distant roar resembling the sound from a seashell held against the ear. That valves of pumps may cause sounds when they open and close is also a well recognized physical phenomenon and the heart is primarily a pump. It has never been demonstrated that pericardial fluid can produce sounds unless air is also present in the pericardium. Such sounds are like the succussion or splash when there is pneumohydrothorax and these sounds are absent on shaking the chest when there is fluid without air in either the pleural cavity or the pericardium

Furthermore when there is hypertension there is frequently accentuation of the aortic second sound and when there is mitral stenosis there is frequently accentuation of the pulmonic second sound. This accentuation is due to the increased pressure against the aortic and pulmonic valves as they close

PAUL D WHITE.

#### THE STAFF DOCTOR UNDER COMPENSATION

To the Editor of the NEW ENGLAND JOURNAL OF MEDICINE —

The Committee of the Middlesex South District Medical Society appointed last October on the classification of insured patients sent out a questionnaire in December 1927. About seventy were sent to the Superintendents of the larger hospitals in all the industrial cities except Boston and to some

twenty towns. The writer was assigned the task of tabulating the replies

Information was obtained from every industrial city outside of Boston except one and twelve towns reported. Forty-two hospitals returned answers to the questionnaire. Six hospitals provided information by letter and there were personal reports from staff representatives of nine hospitals giving altogether dependable information from fifty-seven hospitals. Previous to April 15 1928 the data showed that forty-nine hospitals classified insured cases as private semi-private or intermediate. Eight or ten hospitals reported that similar action was under consideration by the trustees. The hospitals reporting this classification permit the members of the staff to charge for medical service and a large number maintain an open staff. Nearly all the hospitals reported that in most cases the insurance companies recognized their obligation for payment.

The March 22nd issue of the NEW ENGLAND JOURNAL OF MEDICINE gives the viewpoint of the Medical Advisory Committee of 1920 also the decision of the Board in the case of Martin H Spellman M.D. versus the Travelers Insurance Company. It is very evident that the viewpoint of the staff doctors connected with the community hospitals is very different from the recommendation by this Advisory Committee which the Industrial Accident Board adopted. The Advisory Committee also reported that there has been bitter feeling often expressed because of the ruling that in effect often forces hospital physicians to treat insured cases for nothing. The information obtained indirectly through the questionnaire discloses the fact that there is a universal deep seated feeling of unfair treatment among staff physicians outside the teaching hospitals that cannot be explained on the ground of a mercenary motive. It is the firm conviction of the writer that the viewpoint of the staff doctor connected with the community hospitals has never been fully explained to the Accident Board. We understand that this Advisory Committee has not been called to function since the recommendation quoted was given. The viewpoint given was largely if not entirely influenced by the conditions prevailing in the large teaching hospitals. These hospitals have a large intern service giving instruction to students graduates and others seeking experience and instruction as specialists. The patients understand in advance that they lend their persons to be used for clinical instruction. The writer can understand the practical difficulty of apportioning fees to staff doctors in these institutions where most of the personal care is given by students or young graduates anxious for the experience and the personal contact with the staff doctor is usually very slight.

The issue as stated by the Board is whether or not the insurance companies should be charged with the payment for service rendered by staff doctors in hospital cases coming into the hospital in the usual course. The Special Commission of 1926 reporting in 1927 see page 12 expresses the opinion that the extent of the free service given by the staff should be determined by the hospital trustees rather than the Industrial Accident Board. While this opinion does not have the force of Statute Law it does seem to both hospital trustees and staff doctors in line with good common sense. Certainly a large per cent of hospitals have acted under legal advice along this line as the questionnaire has shown.

The Compensation Law places no new burden on

either hospitals or physicians Under the old regime the injured worker quite often sought hospital aid as a charity patient and if severely injured might require aid for his family Under the Compensation Act his status was changed He no longer occupied a twin charity hospital bed In exchange for the risk he assumed as an industrial worker he was guaranteed by Massachusetts law compensation for time lost, with hospital and medical care The burden was transferred from his own shoulders and placed on the consuming public The worker in boots and shoes, woolen or cotton goods, electric machinery and rubber goods, no longer became a charge on his local community, the local hospital and the local physician, as a fit subject for charity The burden of his care being transferred to the far reaching consuming public, instead of being a local burden he became a state or nation wide public beneficiary, with the guarantee of the State that those aiding him are entitled to reasonable fees for adequate service The insurance companies were designated as *public servitors for a profit*\* Section 30 grants to local hospitals and local physicians the right to draw on the consuming public, the law providing reasonable fees for adequate service, personally given Under Section 30 it is hard to conceive of the reasonableness of free medical service Under free service 4% of the population bear the burden The share of the consuming public in 1925, the last published rates, was between 1/5 and 1/4 of one per cent. of the value of the manufactured product or from \$ 20 to \$ 25 on each \$100 worth of products consumed The burden is not heavy when shared by those designated to bear it under the Law If necessary and adequate medical service is given free do not either the consuming public or the insurance companies benefit? Is it conceivable that the legislature intended to draft a substantial group of professional citizens to render free service for the benefit of a business group, or the consuming public? Has not a competent physician equal right with any worker for compensation for his time skill and technical training, when seeking to save human life or restore the injured worker to active service? Because humanity demands emergency treatment should this voluntary service warrant increased tolls to profit seeking interests? Local staff physicians are doctors usually chosen because they are able to render efficient service to the community, rather than those seeking the position for the needed experience If individual hospital physicians attempt to profiteer let it be reported to trustees and staff physicians They can take proper action

The Council on Medical Education and Hospitals of the American Medical Association decrees that a general hospital with 100 beds is the minimum equipment for a worth while intern service The intern service is limited when there is any, in most of the hospitals considered Fully half of the hospitals in this group are on the accredited list of the American College of Surgeons When the staff doctor gives free service to charity patients or to those who can only afford a less than cost hospital rate, in the opinion of the writer he has met his legitimate obligation to the hospital and community

Wherever the regulations of the hospital permit and the patient is allowed to select his own physician, the fact that a staff doctor exercises the relationship and responsibility of a private physician

actually rendering the needed service personally, makes it hard to understand the reasonableness of any quibble over free service, or whether the doctor is chosen by the hospital, the patient, or the insurer The staff doctor does the *needed work*, the patient receives the *benefit* and the insurer collects the *premium* to pay a reasonable fee for adequate service under Section 30

GEORGE E WHITEHILL,  
*Secretary Hospital Conference Committee  
Middlesex South District Medical Society*

#### COMMENTS ON AN EDITORIAL

To the Editor of the NEW ENGLAND JOURNAL OF MEDICINE

Dear Sir

The writer of a recent editorial in the NEW ENGLAND JOURNAL OF MEDICINE under the caption 'Is It True?' demands an explanation, or as he puts it, a public disclaimer of certain conditions which exist in the Out Patient Department of the Boston Lying in Hospital, to which he takes exception, having obtained his information from a recent magazine article published by a student in the Harvard Medical School. This article, though in some respects inaccurate, is evidently the student's recollection of his experiences while on service on the District, and while harmless in itself, has evidently aroused a feeling in the minds of some members of the medical profession that the interests of both patient and student are neglected by the authorities of the Boston Lying in Hospital and by the Obstetric Department of the Harvard Medical School

Although entirely ignorant of the facts and without trying to learn them, the writer of the editorial suggests that the conditions which exist contribute largely to the maternal and fetal mortalities for which Massachusetts has been criticized, and he seems to believe that these mortalities would be very much lessened if, first, a trained nurse attended all cases on the District with the extern and, second, if students were given an opportunity to deliver several cases under supervision in the wards of the Hospital before being sent on the District.

The supposition that the conditions in the Out Patient Department of the Boston Lying in Hospital contribute largely to either maternal or infant mortality could hardly have been entertained if the writer of the editorial had taken any trouble to ascertain the facts The following figures are taken from the reports of our Out Patient Department for the last two years\* During these two years, 2628 women were cared for in the Out Patient Department of the Boston Lying in Hospital Of these, 31 were transferred to various hospitals for various complications arising either during labor or during the convalescent period Two of these patients died, one of pneumonia and the other of operative shock Two deaths in over 2600 patients are regrettable, but can hardly be considered a serious mortality, and neither of these could be attributed to any act of an extern or to absence of a trained nurse 2644 babies were delivered during the same period Among those there were 102 stillbirths 67 of which were either non viable or were macerated Six stillbirths occurred before the arrival of the extern and 5 were

\*Instead of granting community rights to insurance companies in all hospitals

\*1935 and 1936 The figures for 1927 were not available when this was written

due to asphyxia following prolapse of the cord the cord being prolapsed and pulseless at the time of the arrival of the extern in answer to the first summons Syphilis was the cause of the stillbirths in 2 cases and there was one monster and one case of premature separation of the placenta. The other 20 stillbirths were due to intra uterine asphyxia resulting either from some difficulty in delivery, or interference with the circulation of the child during an apparently normal labor. It is possible that some of these babies might have been saved if the patient had been in a hospital under the immediate care of an expert obstetrician, who was equipped to interfere at the first sign of failure of the fetal heart, but the figures of any living in hospital will show as large a proportion of stillbirths as this even under the best conditions. It would seem therefore fair to assume that the interests of the patients were not seriously injured by the system criticized. The remainder of the babies were born alive and although some of them died during the convalescent period, or were transferred to various hospitals for special care the care received at the time of birth cannot be held responsible.

I fail to see where the presence of a trained nurse at the time of delivery would have altered this mortality greatly. Of course, it is fair to say that the patients cared for in the Out Patient Department of the Boston Living in Hospital are, in the main, a hand-picked group. Every patient who applies for care in the Out Patient Department is studied in the pre-natal clinics and all patients who present any abnormality, present or past, which renders them poor risks are referred to the Hospital for care and are not taken care of in the Out Patient Department. A few of them however, refuse to go to the Hospital and some cases send for help in emergencies, who have not been under our charge during pregnancy but as far as we can select cases our Out Patient Department contains only patients who have been carefully examined and pronounced safe for delivery at home. Furthermore through the coöperation of the Community Health Association a nurse is furnished to any patient at any time for 24 hours including the labor if the patient so desires and daily visits are made on each patient by the nurses of the Community Health Association throughout the convalescent period. If the patient does not care to have a nurse at the time of delivery we do not force one on her but she can have one if she so desires. The criticism that there should be a trained nurse present on all cases we believe to be without foundation.

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In sending our externs to care for patients in child birth without a trained attendant we believe that

we are doing more in the education of the student in self reliance and in other qualities which will be of great value to him in the future than could be accomplished in any other way. He learns how to get ready for an emergency case, he learns that labor is a normal process in normal women in the vast majority of cases, and he learns to depend on himself under somewhat trying circumstances although he knows that he can obtain help or advice at any time. He must report progress to the House Officer in charge of the District at specified intervals. If he fails to report the reason is investigated. If he were there with a trained nurse on whose experience he would rely he would miss one of the greatest developmental factors of his medical education. In other clinics the work is conducted differently, but in our clinic it has been conducted in this way with steady improvement in supervision for many years and we see no reason to change.

In regard to the criticism that he should be given an opportunity to deliver several cases under the best conditions in the Hospital before going on the District, there may be a fair difference of opinion. An opportunity is offered to every student to see cases delivered in the Hospital as well as on the District before he goes on duty and he is supposed to do so. A large proportion of the students take advantage of this opportunity some as will always happen put off doing so until shortly before their time of service and then find that there are no cases in labor in the Hospital during the time that they can devote to observation. This cannot be entirely avoided but every man is supposed to see cases delivered before going on the District and many do see from five to ten cases.

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Very truly yours

FRANKLIN S. NEWELL,  
Professor of Clinical Obstetrics  
Harvard University



either hospitals or physicians Under the old regime the injured worker quite often sought hospital aid as a charity patient and if severely injured might require aid for his family Under the Compensation Act his status was changed He no longer occupied a twin charity hospital bed In exchange for the risk he assumed as an industrial worker he was guaranteed by Massachusetts law compensation for time lost, with hospital and medical care The burden was transferred from his own shoulders and placed on the consuming public The worker in boots and shoes, woolen or cotton goods, electric machinery and rubber goods, no longer became a charge on his local community, the local hospital and the local physician, as a fit subject for charity The burden of his care being transferred to the far reaching consuming public instead of being a local burden he became a state or nation wide public beneficiary, with the guarantee of the State that those aiding him are entitled to reasonable fees for adequate service The insurance companies were designated as *public servitors for a profit*\* Section 30 grants to local hospitals and local physicians the right to draw on the consuming public, the law providing reasonable fees for adequate service personally given Under Section 30 it is hard to conceive of the reasonableness of free medical service Under free service 4% of the population bear the burden The share of the consuming public in 1925, the last published rates, was between 1/5 and 1/4 of one per cent of the value of the manufactured product, or from \$ 20 to \$ 25 on each \$100 worth of products consumed The burden is not heavy when shared by those designated to bear it under the Law If necessary and adequate medical service is given free, do not either the consuming public, or the insurance companies benefit? Is it conceivable that the legislature intended to draft a substantial group of professional citizens to render free service for the benefit of a business group, or the consuming public? Has not a competent physician equal right with any worker for compensation for his time, skill and technical training when seeking to save human life or restore the injured worker to active service? Because humanity demands emergency treatment should this voluntary service warrant increased tolls to profit seeking interests? Local staff physicians are doctors usually chosen because they are able to render efficient service to the community, rather than those seeking the position for the needed experience If individual hospital physicians attempt to profiteer let it be reported to trustees and staff physicians They can take proper action

The Council on Medical Education and Hospitals of the American Medical Association decrees that a general hospital with 100 beds is the minimum equipment for a worth while intern service The intern service is limited when there is any in most of the hospitals considered Fully half of the hospitals in this group are on the accredited list of the American College of Surgeons When the staff doctor gives free service to charity patients or to those who can only afford a less than cost hospital rate in the opinion of the writer he has met his legitimate obligation to the hospital and community

Wherever the regulations of the hospital permit and the patient is allowed to select his own physician, the fact that a staff doctor exercises the relationship and responsibility of a private physician

actually rendering the needed service personally, makes it hard to understand the reasonableness of any quibble over free service, or whether the doctor is chosen by the hospital, the patient, or the insurer The staff doctor does the *needed work*, the patient receives the *benefit* and the insurer collects the *premium* to pay a reasonable fee for adequate service under Section 30

GEORGE E WHITEHILL,  
*Secretary Hospital Conference Committee  
Middlesex South District Medical Society*

#### COMMENTS ON AN EDITORIAL

To the Editor of the NEW ENGLAND JOURNAL OF MEDICINE

Dear Sir

The writer of a recent editorial in the NEW ENGLAND JOURNAL OF MEDICINE under the caption 'Is It True?' demands an explanation, or as he puts it, a public disclaimer of certain conditions which exist in the Out Patient Department of the Boston Lying In Hospital, to which he takes exception, having obtained his information from a recent magazine article published by a student in the Harvard Medical School. This article, though in some respects inaccurate, is evidently the student's recollection of his experiences while on service on the District, and while harmless in itself, has evidently aroused a feeling in the minds of some members of the medical profession that the interests of both patient and student are neglected by the authorities of the Boston Lying In Hospital and by the Obstetric Department of the Harvard Medical School

Although entirely ignorant of the facts and without trying to learn them, the writer of the editorial suggests that the conditions which exist contribute largely to the maternal and fetal mortalities for which Massachusetts has been criticized, and he seems to believe that these mortalities would be very much lessened if, first, a trained nurse attended all cases on the District with the extern, and, second, if students were given an opportunity to deliver several cases under supervision in the wards of the Hospital before being sent on the District.

The supposition that the conditions in the Out Patient Department of the Boston Lying In Hospital contribute largely to either maternal or infant mortality could hardly have been entertained if the writer of the editorial had taken any trouble to ascertain the facts The following figures are taken from the reports of our Out Patient Department for the last two years\* During these two years, 2628 women were cared for in the Out Patient Department of the Boston Lying In Hospital Of these 31 were transferred to various hospitals for various complications arising either during labor or during the convalescent period Two of these patients died, one of pneumonia and the other of operative shock Two deaths in over 2600 patients are regrettable, but can hardly be considered a serious mortality, and neither of these could be attributed to any act of an extern or to absence of a trained nurse 2644 babies were delivered during the same period Among those there were 102 stillbirths 67 of which were either non viable or were macerated Six stillbirths occurred before the arrival of the extern and 5 were

\*Instead of granting community rights to insurance companies in all hospitals

\*1925 and 1926 The figures for 1927 were not available when this was written

due to asphyxia following prolapse of the cord the cord being prolapsed and pulseless at the time of the arrival of the extern in answer to the first summons Syphilis was the cause of the stillbirths in 2 cases and there was one monster and one case of premature separation of the placenta. The other 20 stillbirths were due to intrauterine asphyxia resulting either from some difficulty in delivery, or interference with the circulation of the child during an apparently normal labor. It is possible that some of these babies might have been saved if the patient had been in a hospital under the immediate care of an expert obstetrician, who was equipped to interfere at the first sign of failure of the fetal heart, but the figures of any lying in hospital will show as large a proportion of stillbirths as this even under the best conditions. It would seem therefore fair to assume that the interests of the patients were not seriously injured by the system criticized. The remainder of the babies were born alive and although some of them died during the convalescent period or were transferred to various hospitals for special care the care received at the time of birth cannot be held responsible.

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Very truly yours

FRANKLIN S. NEWELL,  
Professor of Clinical Obstetrics,  
Harvard University

## A CORRECTION OF AN ALLUSION TO SERVETUS

To the Editor of the NEW ENGLAND JOURNAL OF MEDICINE

Dear Sir—

I note in your edition of May 10th, on page 650, under the heading "Boston Medical Library" that Servetus was burned at the stake in Geneva because of his observations on the pulmonary circulation. I regret such a statement should have been made, for it is always unfortunate to put into circulation errors that are apt to be handed on until they are taken to be truths.

Years before the appearance of the *Christianismi Restitutio* in 1553 Calvin had written to Farel "I will not pledge my faith to him for did he come (to Geneva) if I have any authority I should never suffer him to go away alive."

It was not a question of medical discovery, but a question of long standing pronounced heresy which was the complaint against Servetus. As early as 1531 he had written *De Trinitatis Erroribus*. Again in his little pamphlet *Apologetica Disceptatio pro Astrologia* he had written in favour of Astrology which was disturbing alike to the medical and clerical profession, and now comes in 1553 the *Christianismi Restitutio*. The Roman Catholics had arrested him in Vienne and thrown him into prison. On escaping from this he found the Protestants of Geneva no less incensed with his writings and so the stake became his fate—a common fate to all heretics in the 16th century. The charges against him were under ten separate heads, the two most important of which relate to his views on the doctrine of the Trinity and Infant Baptism. "The Christian Church early found out that there was only one safe way of dealing with heresy. From the end of the 4th century, when the habit began, to the climax on St Bartholomew's day, it was recognized universally that only dead heretics ceased to be troublesome." As to his discovery, Osler goes on to say—"in possession of a fact in physiology of the very first moment Servetus described it with extraordinary clearness and accuracy. But so little did he think of the discovery, of so trifling importance did it appear in comparison with the great task in hand of restoring christianity, that he used it simply as an illustration when discussing the nature of the Holy Spirit in his work *Christianismi Restitutio*" (See Sir William Osler, *Johns Hopkins Hospital Bulletin*, Vol XXI, No 226, January, 1910).

HENRY BARTON JACOBS

11 Mt Vernon Place, Baltimore  
May 17th, 1923

## NEWS ITEMS

**APPOINTMENT OF DR LOUIS E PHANEUF**—Dr Louis E Phaneuf No 270 Commonwealth Avenue Boston has been appointed Gynecologist and Obstetrician in Chief at the Carney Hospital.

**CAMPAIGN NOTES OF THE AMERICAN SOCIETY FOR THE CONTROL OF CANCER**—NOTICE OF REMOVAL—Friends of the Society who come to visit the headquarters in the 17th floor of 25 West 43d Street should note that since May 1 of this year the office has been located on the 15th floor of the building at that address.

The headquarters have gradually become crowded and less convenient than they were three years ago when the Society moved to the present building. The Society's income and consequently the volume of its work, were much less then than now.

In the new offices there will be room for the regular meetings of the Executive Committee which take place every month, and for such special committee meetings as may be necessary. There will be a library a nucleus of which already exists and which it is hoped will in time become one of the most helpful collections of literature on cancer to be found anywhere. There will be a more adequate store room and shipping room where the large amount of printed material which the Society prepares and distributes to all parts of the United States will be handled.

A cordial welcome will await visitors at the new headquarters.

**APPOINTMENT OF DR J W COX, NEW FIELD REPRESENTATIVE**—On March 1 Dr John W Cox assumed the duties of a Field Representative of the American Society for the Control of Cancer sharing that title with Dr R V Brokaw.

Dr Cox who was born in 1883 is a graduate in medicine of the University of Syracuse and has had much training and experience in public health work. For the last three years he has been a field investigator of the Bureau of Social Hygiene. Before that he spent six years in the United States Public Health Service being health officer of a demonstration county until the completion of that work.

Dr Cox has had the advantage of considerable laboratory experience. He has been Instructor in Bacteriology and Pathology of the College of Medicine, Syracuse University, and Professor of Pathology, Bacteriology and Health at the University of North Dakota. From 1914 to 1917 he was Acting Director of State Health Laboratories of North Dakota with divisions of Pathology, Sanitation, Child Welfare, Epidemiology and Nursing.

As Health Officer of Demonstration at Arlington County Virginia Dr Cox worked for the Virginia State Board of Health the U S P H S the Rockefeller Foundation and the local board of health jointly. During the war, he was a captain in the Medical Corps of the United States Army. He is a member of the Southern Medical Association and the American Public Health Association. His home is in Alexandria, Virginia.

As has been customary with the other Field Representatives of this Society Dr Cox is beginning his service by taking an intensive course of training in cancer at the Memorial Hospital, New York in preparation for his work in various parts of the country where he will go to assist the State Chairmen.

## NOTICES

## FIFTH INTERNATIONAL MEDICAL CONGRESS

The fifth International Medical Congress for Industrial Accidents and Occupational Diseases will be held in Budapest Hungary September 2nd to 8th 1928 under the patronage of H S H Nicholas Horthy de Nagybánya Regent of Hungary Joseph Vass DD Minister of Social Welfare and Labour Maxilian Herrmann Minister of Commerce John Mayer, Minister of Agriculture Honorary Presi-

dents Emery Drehr and Cornelius Scholtz Secretaries of State in the Ministry of Social Welfare and Labour Francis Ripka Lord Mayor of the City of Budapest, Eugene Sipőcz Mayor of the City of Budapest

All those who are engaged in the subjects to be discussed are cordially invited to attend

PROF. TIBERIUS GYÖRI,

*Under Secretary of State, Chairman of the  
Organization Committee*

PROF. TIBERIUS VEREBELY

*Professor at the Pázmány Péter University of Budapest Chairman of the  
Executive Committee*

## UNITED STATES CIVIL SERVICE EXAMINATIONS

The United States Civil Service Commission announces the following open competitive examinations

Physiotherapy Aide

Physiotherapy Pupil Aide

Applications must be on file with the Civil Service Commission at Washington D C not later than June 23 1928

Assistant Medical Officer

Associate Medical Officer

Medical Officer

Senior Medical Officer

Applications will be rated as received by the U S Civil Service Commission at Washington D C until June 29 1928

There is especial need for medical officers qualified in tuberculosis or neuropsychiatry

## UNITED STATES PUBLIC HEALTH SERVICE

Surgeon L L Lumsden has been directed to proceed from Washington D C to Providence R I and to such other places in the State of Rhode Island and return to confer with State and local health authorities concerning the establishment of county health units May 11 1928

## REPORTS AND NOTICES OF MEETINGS

### THE HARVARD MEDICAL SOCIETY

The final meeting of the Harvard Medical Society for the school year was held on May 22 1928 at 8 15 o'clock in the Peter Bent Brigham Hospital amphitheatre Because of a full program no cases were presented Dr Samuel A. Levine presided

The first paper entitled Observations on the treatment of so-called nephrosis was presented by Dr M H Barker Only recently has the condition called nephrosis been separated from chronic nephritis with edema and called a clinical entity Dr Barker pointed out several differential features of nephrosis Marked edema occurs frequently with pleural effusions but with few other signs Second there is oliguria the urine being cloudy of high specific gravity and with enormous quantities of albumen in it The sediment contains few or no cells and the fat is doubly refractive Third there is on the whole a normal renal function Fourth the blood picture is upset The total blood protein is

low the albumen globulin ratio being reversed with the albumen lower The blood cholesterol goes up to a 15 500% increase showing a high fat content The blood calcium is low Fifth the basal metabolism is low, ranging from a negative 15 to a negative 35 A fatty degeneration of the convoluted tubules is seen rather than a general inflammatory response showing the condition to be caused or associated with a general metabolic upset

In the treatment of these cases three different diets were tried A low protein diet gave no improvement A standard diet of restricted salts and fluids gave only a little improvement Epstein's diet of low fats and high proteins did the most good In an attempt to raise the metabolism thyroid extract was given In the main it had no effect except when the dosage went above a certain level nausea and vomiting resulted In one case intravenous thyroxin was tried and the metabolism came to normal but subsequently returned to its original low level The assumption was that the lack of response to the oral administration of thyroid was due to nonabsorption by the edematous intestine

In attempting to relieve the edema the ordinary diuretics were of little use the urine not being increased in amount nor the edema lessened Calcium chloride and ammonium sulphate had some effect Since mercurial diuretics are injurious to the kidney, only novasurol was tried and this with extreme care Saligen a new German diuretic, gave good diuresis without signs of renal irritation Since it works best in the presence of an acid forming radical ammonium nitrite was given With this treatment all the edema was removed

Dr Barker summarized his paper by stating that nephrosis must be considered as a clinical entity and that it is best treated with a high protein and low fat diet with saligen medication

The second paper of the evening was presented by Dr Marshall N Fulton who spoke on the effect of quinidine sulphate on ventricular tachycardia and ventricular fibrillation Cases of ventricular tachycardia are very rare as only twelve cases have occurred in the many thousands of admissions to the medical service of the Peter Bent Brigham Hospital In most of these cases it has occurred in combination with coronary thrombosis The mechanics are probably that of a circus movement, similar to that in auricular flutter The therapeutic effects of quinidine are to slow conduction and to prolong the refractory phase of the heart muscle The second action predominates In the series of twelve cases quinidine produced the normal sinus mechanism in eight, and slowed the heart in two The dose was variable and oftentimes large (up to 15 grams every 24 hours) and in certain cases had to be continued for a long time

Attempts were made to find out the effect of quinidine in experimental animals Ventricular fibrillation was produced in cats by the intravenous injection of Ouabain a strophanthin mixture Quinidine had no effect on the fibrillation The objections to these experiments are obvious first, the toxic substance producing the fibrillation is always in the blood second the large doses of quinidine needed depressed the respiration and affected the heart muscle *per se* Induction currents were then tried Quinidine inhibited the initial ventricular tachycardia but had no effect on the final fibrillation The

same experiments were tried on dogs with similar results

In conclusion Dr Fulton stated that so far experimental work has given us no help in the use of quinidine for the treatment of ventricular tachycardia in patients, other than what is already known

The final paper was presented by Dr John Powers, who discussed the experimental production of mitral stenosis. Dr Powers pointed out that two operations have been performed for the removal of part of the mitral valve in cases of mitral stenosis. Both of these operations were technically successes but the patients died six days later of congestive failure.

Mitral stenosis has been produced before in various ways. In these dogs it was begun by cauterizing the valve. At the end of the operation a systolic murmur was always present, but in only one of the eight dogs used did a diastolic murmur develop. On the second day after the operation pure cultures of either streptococcus viridans or streptococcus cardio-orthitides (the supposed etiological agent of acute rheumatic fever) were inoculated and again on the fourth day. Within 12 hours after this, minute vegetations appeared on the cauterized valve, gradually increasing in size. Blood cultures were positive for two days and the animal gave the picture of vegetative endocarditis. If death did not occur from the acute regurgitation produced, and if the animal set up an immunity against the organisms, a thick stenosed valve was the final result. The total operative mortality was 40 per cent.

Dr Powers summarized by stating that cauterization and subsequent bacterial inoculation will produce a mitral stenosis if the animal doesn't die.

#### THE MASSACHUSETTS CENTRAL HEALTH COUNCIL, MAY 22, 1928

The first meeting of the Massachusetts Central Health Council, recently reorganized, was held Tuesday, May 22, at 5 30 P M, at the Twentieth Century Club, 3 Joy Street, Boston.

The agencies composing the new Council are American Society for Control of Cancer, Dental Hygiene Council of Massachusetts, Massachusetts Associations of Boards of Health, Massachusetts Association of Directors of Public Health Nursing, Massachusetts Department of Public Health, Massachusetts Medical Society, Massachusetts Society for Mental Hygiene, Massachusetts State Nurses Association, Massachusetts Tuberculosis League, Massachusetts Veterinary Association, and the New England Heart Association.

Over 40 representatives were present and participated in the business meeting, at which new officers were elected for the balance of the calendar year. These are: President, Dr Henry B Elkind, Medical Director, Massachusetts Society for Mental Hygiene; Vice-President, Dr Merrill E Champion, Director of the Division of Hygiene, Massachusetts Department of Public Health; Secretary-Treasurer, Mr Frank Kiernan, Executive Secretary, Massachusetts Tuberculosis League; and Auditor, Dr H W Peirce, Massachusetts Veterinary Association.

A dinner meeting followed the business session. This was addressed by Dr George H Bigelow, Commissioner, Massachusetts Department of Public Health, and Dr Warren F Draper, Assistant Surgeon General, United States Public Health Service.

Dr Bigelow, in discussing his topic "Are There Any Unsolved Problems?" offered a host of problems still unsolved in the field of public health, ranging from the control of communicable diseases up to the problem of licensing public clinics. Dr Bigelow expressed his belief that the Massachusetts Central Health Council had an important function in the health work of the State, and he suggested that there were two things the Council could take up during the coming year: first it could draw up a code of ethics in regard to the field of social medicine, and second, it could study the problem of rural health service for communities of 10,000 or less.

Dr Draper gave a brief review of accomplishments through cooperation in the field of public health, and said that the city, the county, the state, and the nation as a whole has benefited from this method of handling public health problems.

#### ANNUAL MEETING OF THE HAMPSHIRE DISTRICT MEDICAL SOCIETY

The annual meeting of Hampshire District was held Wednesday, May 2. Dr J G Hanson offered the following resolution: "Resolved that the Hampshire District Medical Society indorse the principle of a Cost Rate for hospital care and a Paid Medical Service for all patients protected by insurance against injury or sickness, in all hospitals maintained in part by income from endowed charity or annual charity subscriptions, and that this society instruct the Councillors from this District to use their best efforts to secure concerted action by the Council of the State Society to make these principles effective." This resolution was seconded and voted approved.

The following Fellows were elected officers:

President Dr Francis E O'Brien, Haydenville  
Vice-President Dr Lucius Beverly Pond, Easthampton

Secretary and Treasurer Dr Luther O Whitman, Northampton

Librarian Dr Frank H Smith, Hadley

Councillors Dr E D Williams, Easthampton  
Dr A J Bonneville, Hatfield Dr J G Hanson, Northampton

Commissioner of Trials Dr William Peckham, Stutson, Cummington

Censors Dr A J Bonneville, Hatfield  
Superior Dr C H Wheeler, Haydenville, Dr J D Collins, Northampton  
Dr O W Cobb, Easthampton, Dr N C Haskell, Amherst

Councillor for State Nominating Committee Dr J G Hanson, Northampton  
Dr A. J. Bonneville, Hatfield Alternate

Dr Chester T Cobb, the retiring president, gave an address on the subject of Cancer and the need for the establishment of a proper clinic in Hampshire County using Dickinson Hospital as a base.

LUTHER O WHITMAN, Secretary

#### THE TRUDEAU SOCIETY

The next meeting of the Trudeau Society of Boston will be held on Monday evening June 4 1928 at 8 15 P M, in John Ware Hall, Boston Medical Library 8 The Fenway, Boston.

The speaker will be Dr Evarts A Graham of

St. Louis subject Remarks on Pulmonary Suppuration'

Physicians, medical students and nurses are cordially invited to attend this meeting

RANDALL CLIFFORD, *Secretary*

## MASSACHUSETTS SOCIETY OF EXAMINING PHYSICIANS

### ANNUAL MEETING—ELECTION OF OFFICERS

The Copley Plaza Hotel  
Friday, June 1 1928 6 30 P M  
Dinner \$2.50 per plate

#### PAPERS

1 The Treatment of Major Traumatic Emergencies Dr Charles C Lund Boston City Hospital Discussion opened by Dr Arthur W Allen Massachusetts General Hospital, and Dr Thomas E Chandler Massachusetts Homoeopathic Hospital

2 Acute Asphyxia Dr Cecil K. Drinker Harvard Medical School Discussion opened by Dr Francis D Donoghue Massachusetts Industrial Accident Board

Dr Sylvester will speak briefly on the new legislative bill concerning the registration of physicians  
C P SYLVESTER, M.D. *President*  
W P COLES M.D., *Secretary*

#### SOCIETY MEETINGS

May 31 June 12—American Society for the Study of the Feeble-minded. Detailed notice appears on page 781

June 4—Massachusetts Society of Examining Physicians Detailed notice appears above

June 4—The Trudeau Society Detailed notice appears on page 782 issue of May 24

June 7—Boston Dispensary Complete notice appears on page 782 issue of May 24

June 18 20—Meeting of the American Association for the Study of Gout See page 425 issue of April 12 for complete notice

June 18 22—Convention of the Catholic Hospital Association. Complete notice appears on page 1597 issue of February 16

December 3 7—Radiological Society Convention Detailed notice appears on page 712 issue of May 17

## BOOK REVIEWS

*Pneumothorax & Surgical Treatment of Pulmonary Tuberculosis*, by CLIVE RIVIERE, M.D. (Oxford Medical Publications)

This is not a book for the general practitioner but for the specialist who employs artificial pneumothorax treatment. He devotes seven chapters to other forms of surgical treatment of pulmonary tuberculosis such as Thoracoplasty Extrapleural Pneumolysis (Apicolysis) Phrenic Evulsion or Exarthesis (Phrenicotomy) and Cavity Drainage To these chapters however he devotes only little space realizing that it is strictly the work of the thoracic surgeon devoting his attention only to indications for the above operations The main theme of the book is devoted to artificial pneumothorax. He stresses each step in the operation in a rather lengthy manner emphasizing very carefully each progressive step He quotes very freely the experiences of other writers and refers frequently to the work of the Matson brothers of Portland Oregon

The only exception one can take to this book is the degree of compression the writer recommends He advocates rather high intrapleural pressures It

has been the custom in this country to use lower intrapleural pressures and have more frequent refills The incidence of pleural effusions complicating artificial pneumothorax seems to be thereby lessened He devotes a chapter on Oleothorax and one on Pneumothorax in Childhood both procedures practised very little in this country

On the whole, however the book is to be highly recommended the style very lucid and sprightly and the specialist in pneumothorax treatment will find a careful presentation of the subject in little space by an authoritative and experienced worker in the field of pulmonary tuberculosis

*Handbook for The Medical Soldier*, by ARNOLD DWIGHT TUTTLE, Major, Medical Corps U S Army William Wood & Co New York. 1927

Although scarcely exceeding a pocket edition in size, this compendium is so extensive that it includes such widely divergent subjects as harnessing a horse the anatomy of the human brain and foreign currency valuations In fact, it is a comprehensive presentation of all the basic knowledge supposedly possessed by enlisted men in the Medical Department. A foreword written by The Surgeon General supplies the following note concerning the author 'the Author's extensive service, broad experience and general knowledge have peculiarly fitted him to compile a work of this character He has lived and knows the life of the enlisted men for whom he is writing He never overlooks an opportunity to champion their cause to promote their contentment, and to improve their prospects'

*Textbook of Operative Obstetrics* by PROFESSOR DR. GEORG WINTER, Königsberg, in collaboration with Prof Dr W Benthin Königsberg and Prof Dr H Naujokes, Marburg Berlin and Vienna Urban and Schwarzenberg 1927

This volume which is the outgrowth of the author's lectures and contributions for the past twenty five years constitutes a very comprehensive treatise for physicians and students It includes not only the classical procedures of operative obstetrics but also therapeutic abortion the treatment of miscarriage primary plastic repair, and foetal injuries It is illustrated with eleven tables and with 228 figures some of which are in two colors It may be taken to represent the operative technic and practice of the Königsberg and Marburg Clinics

*The Peaks of Medical History* by CHARLES L. DANA, A.M. M.D., LL.D. Second Edition New York Paul B Hoeber Inc., 1928

The first edition of this noteworthy outline of the evolution of medicine was reviewed in the JOURNAL with enthusiastic approbation which has been confirmed by the speedy demand for a reprinting In this second edition no special change is made except the correction of a few minor inaccuracies and the addition of several new illustrations of which there are now forty-three full page plates and sixteen in the text. It is earnestly to be hoped that in the near future Dr Dana will fulfill the suggestion to expand his story since of him as well as of Dr Garrison to whom the work is dedicated it may be said that he is *bonis literis haud levis imbutus*

*Clinical Researches in Acute Abdominal Disease*  
ZACHARY COPE B.A., M.D. M.S. (Lond.), F.R.C.S.  
(Eng.) Hunterian Professor and Sometime Arris  
and Gale Lecturer, Royal College of Surgeons  
Second Edition Oxford University Press Lon-  
don 1927

Every clinical case is regarded by the author as being an experiment of nature, and it is the duty of the clinician to observe the conditions of the experiment as closely as he can. The rules or conditions which should be observed in clinical research of this nature are enumerated as follows

First There must be accurate observation of the facts of each case investigated. Without accurate data no generalization can or should be attempted. There is a natural tendency to put on record those facts which the observer expects, but to slur over points which apparently have no direct bearing on the question at issue.

Second No generalization should be attempted until a considerable number of cases has been investigated.

Third So soon as possible a working hypothesis as to the meaning of certain symptoms should be adopted tentatively. Merely to record symptoms becomes monotonous and unfruitful unless the mind conceives some meaning in them.

Fourth The working hypothesis must be rigidly tested by succeeding cases. One must be ready to sacrifice the most inviting theory if the balance of evidence is against it. It is here that the clinician often fails.

Fifth In any clinical research all accessory means of investigation should be utilized.

The spirit of quantity production is reflected in medical writing not only in total volume output, but unfortunately also in subject matter. There is in many quarters such a wild scramble for a large series of cases that too little reasoning is based on the individual patients as single experiments of nature. It is comforting to learn from this scholarly thesis that the careful observation of the individual patient must remain the starting point for constructive clinical thought. Statistics of end results may be compiled by the office stenographer—but a contribution such as Mr. Cope has made will always remain the fruit of a wide clinical experience and a keenly observant intellect.

*The Medical Department of the United States Army in the World War* Volume II Administration  
American Expeditionary Forces United States  
Government Printing Office 1927 pp 1123

This the second volume of the medical part of the World War Series, considers only the more important administrative activities of the Medical Department of the American Expeditionary Forces, for the scope of these and their ramifications were such as to preclude in the space available a more thorough discussion.

The volume is profusely illustrated, and is divided into six sections as follows. Section I, The Organization and Administration of the Chief Surgeon's Office. II, The Medical Activities of Territorial Sections. III, Hospitals including base and camp hospitals. IV, Evacuation of Patients to the United States, Discontinuance of Hospitals. V, The Army

of Occupation in Germany, and finally Section VI Medical Department Activities American Forces in France. Readers will also find much of general medical interest in the appendix, which should not be skipped.

In the section on base hospitals the account of the New England Units will be especially interesting to readers of this JOURNAL.

At the end of August, 1918 there were abroad, 75 000 beds in base hospitals, some 50 000 being occupied, and allowing 15 per cent of hospitalization for the American forces overseas many more would be needed had the war been much prolonged. As it was at the end of September 1918 the total fixed hospital capacity was over 148 500 beds nearly 80 000 being occupied.

These figures together with the many and varied illustrations including those of hospital trains and their interiors, disinfecting plants, field laboratories, and many hospital centers do much to give the reader some idea of the enormous scope of the work which those who were not there at the time, can form no conception of without reading this volume of the series.

#### BOOKS RECEIVED FOR REVIEW

*Health and Wealth* by Louis I. Dublin. Published by Harper & Brothers. 361 Pages.

*The Ultra-Violet Rays* by Arnold Lorand. Published by The F. A. Davis Company. 258 Pages.

*Studies in the Psychology of Sex* by Havelock Ellis. Published by The F. A. Davis Company. 539 Pages.

*The Surgical Clinics of North America* Published by W. B. Saunders Company. 467 Pages.

*Gonococcal Urethritis in the Male* by P. S. Pelouze. Published by the W. B. Saunders Company. 357 Pages.

*The New York Academy of Medicine Lectures on Medicine and Surgery* Published by Paul B. Hoeber, Inc. 319 Pages.

*The Mind of the Growing Child*, edited by Viscountess Erleigh. Published by the Oxford University Press. 229 Pages.

*Biological Monographs and Manuals* by R. A. Fisher, Sc.D. Published by Oliver and Boyd, Edinburgh. 269 Pages.

*A Manual of the Practice of Medicine* by A. A. Stevens, M.D. Published by W. B. Saunders Company. 657 Pages.

*A Textbook of General Bacteriology* by Edwin O. Jordan, Ph.D. Published by W. B. Saunders Company. 778 Pages.

*Principles and Practice of Obstetrics* by Joseph B. DeLee, A.M., M.D. 1140 Pages.

*Modern Practice of Pediatrics* by William P. Lucas, M.D., LL.D. Published by The Macmillan Company. 962 Pages.

*Transactions of the American Association of Genito-Urinary Surgeons* Published by the Williams & Wilkins Company. 347 Pages.

*Traité de Physiologie, Normale et Pathologique*, Tome III. Published by Masson et Cie, Éditeurs, Paris. 751 Pages.

*Traité de Physiologie Normale et Pathologique*, Tome IV. Published by Masson et Cie, Éditeurs, Paris. 585 Pages.

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## ACTIVE IMMUNIZATION AGAINST DIPHTHERIA\*

### Present-Day Methods and Recommendations

BY CLARENCE L. SCAMMAN, M.D., AND BENJAMIN WHITE, PH.D.†

THE experience gained during the past ten years of diphtheria prevention work has yielded much additional knowledge concerning the prevalence of the disease, the cause of its continuance, the proportion of susceptibles in various communities and the results that may be expected by the practice of active immunization with diphtheria toxin-antitoxin mixtures. This knowledge, in turn, has led to improvements and refinements in the materials for the Schick test, in the toxin-antitoxin mixtures and in their use.

It now seems desirable to make certain modifications in previous recommendations, and in order that physicians may have the most recent information concerning the Schick test and active immunization with toxin-antitoxin mixtures this article has been prepared. Schick tests performed on children of all ages throughout the State show that the great majority give a positive reaction and, therefore, are susceptible to diphtheria. Among the school children of Boston has been found the lowest proportion of susceptibles approximately one-half of all those tested giving a positive Schick test. This proportion rises as we test children in other cities, while in towns and some country districts only a small minority of the children are found to be naturally immune to diphtheria. Therefore, it is a safe assertion that throughout the State many more children are susceptible to diphtheria than are immune. This fact makes it seem preferable, as a rule, to do a preliminary Schick test on all children under six months or over ten years of age and to give all other children three injections of toxin-antitoxin mixture without a preliminary Schick test. In this way the number of injections is reduced by one, possible inaccuracies in the test are eliminated, and only a comparatively small number of immune children will receive the immunizing treatment, and in their cases it will tend to strengthen and prolong their immunity.

The present recommendations are as follows:

#### I THE SCHICK TEST

Whether the Schick test is given preliminary or subsequent to toxin-antitoxin immunization

there are certain precautions to be taken, and an exact technic must be followed if the results are to be accurate and reliable.

#### 1 The Schick Outfit

Outfits for the Schick test can be obtained free from local Boards of Health or their distributing agencies or from the State Department of Public Health, Room 527, State House, Boston. They should be obtained just prior to use and kept continuously in an ice cold place. In the package (Schick outfit) is one vial in which is one capillary tube, containing a definite amount (2 M.L.D.) of aged diphtheria toxin, one bottle marked "10 c.c. Sterile Salt Solution for Toxin Dilution", and one bottle marked "10 c.c. Heated Toxin Dilution, Control."

#### 2 To make dilution

Wipe off with alcohol the capillary tube of toxin, and with sterile gauze or forceps break off the end of the tube at the score mark at the fused portion of the tube, then break the other end of the tube at the score mark in a similar manner, being careful not to lose any part of the contents, and insert this end into the smaller end of a rubber bulb. With one finger over the hole in the bulb expel the entire contents of this capillary tube into the bottle of salt solution marked "Toxin Dilution." Shake thoroughly for at least 60 seconds. Make up the dilution just before using, and do not keep it longer than four hours—it loses potency. The heated toxin dilution for the control test is supplied ready for use. Keep a record of the lot number.

#### 3 The Test

The skin of the flexor surface of both arms is cleansed with alcohol, acetone or ether. On the left arm *exactly* one-tenth of a cubic centimeter of the "Heated Toxin Dilution" is injected into the epidermal layers of the skin. This is best accomplished by means of a short, sharp-pointed 26 or 27 gauge (3/8 inch) needle. Either the 1 c.c. "Vim Shick Syringe", the "Luer" or "Record", or other tuberculin syringe graduated in one-tenths is well adapted for this purpose. On the right arm *exactly* one-tenth of a cubic centimeter of the "Toxin Dilution" is similarly injected intracutaneously. Measure

From the State Department of Public Health, Commonwealth of Massachusetts.

†For records and addresses of authors see "This Week's Issue" page 570.



exactly the one tenth cubic centimeter injected in both cases. Do not guess at the amount from the size of the bleb or wheal produced by the injection. If the point of the needle has been properly inserted, with the lumen uppermost and visible through the skin, the injection should produce a small, slightly raised white area or wheal, which should move with the skin and disappear in about one-half hour. The test will fail if the injection is made under the skin. The injection causes little or no pain, it is not followed by constitutional symptoms, and the site of injection requires no subsequent care.

#### 4 The Negative Reaction

The results of the test should be observed on the fourth day—oftener if possible.

Following the injection no signs are present on either arm except the slight and fleeting mark incident to the insertion of the needle. If the test has been properly done, with the proper toxin dilution, the absence of reaction indicates immunity to diphtheria.

#### 5 The Positive Reaction

A positive reaction begins to appear on the right arm ("Toxin Dilution" injection) in 24 to 36 hours and is characterized by a circumscribed area of redness and slight infiltration, which measures 1 to 2 centimeters in diameter. It develops gradually, reaches its greatest intensity on or about the fourth day, then fades very slowly, leaving a scaly, brownish pigmented spot, which eventually disappears. There is no reaction at the site of the injection of the "Heated Toxin Dilution." The positive result of the test signifies that the individual possesses little or no antitoxin in the blood, and therefore may contract the disease.

#### 6 The Pseudoreaction

In some individuals, particularly in adults, a reaction develops which may be confused with a positive reaction. Owing to a hypersensitivity of some persons to the protein of the diphtheria bacillus present in the toxin, a local reaction may appear at the point of injection. This reaction is differentiated from the true positive reaction by means of the injection of the heated toxin dilution. If a reaction develops at the same time at the sites of both injections, runs a similar course, reaching a maximum of intensity on the third day and then fading, the reaction is classed as a pseudoreaction—the individual is hypersensitive to the protein of the diphtheria bacillus but is immune to diphtheria.

#### 7 The Combined Reaction

If a combined reaction is present, the redness and infiltration at the site of the "Toxin Dilution" injection will be more marked at the end of twenty-four hours than at the site of the "Heated Toxin Dilution" injection. At seventy-two hours the positive reaction will be quite

distinct, while the control test will show only a blotchy area of pigmentation representing the pseudoreaction elements of the test. If the test is positive, the reaction at the end of 96 hours will be much more marked at the site of the unheated toxin injection. The negative and the pseudoreactions indicate immunity, the positive and the combined reactions, susceptibility to diphtheria. A short experience in reading the reactions will suffice to enable one to make a correct interpretation of the results.

If there is any doubt concerning the nature of the reaction, call it *positive*.

### II TOXIN-ANTITOXIN MIXTURE

#### 1 The Material

The preparation now supplied by the State Department of Public Health is the one tenth L plus mixture. It is supplied in boxes containing three 1 c.c. ampoules and in 20 c.c. vials. This preparation can be obtained free from local Boards of Health or their distributors or from the State Department of Public Health, Room 527, State House, Boston. Keep the package cold and return if not used before the expiration date stamped on the label. Keep a record of the lot number on the labels.

#### 2 Dosage

Three injections of 1 c.c. each at 7 day intervals. Measure the dose in a 1 or 2 c.c. syringe, and never use a syringe of more than 5 c.c. capacity. *Do not inject more than 1 c.c.*

The injections should be given subcutaneous, preferably over the insertion of the deltoid muscle. Paint the skin at the site of injection with tincture of iodine immediately before the injection, and observe rigid aseptic precautions throughout.

#### 3 Appearance of Immunity

The immunity produced in response to this method develops slowly and it may require a period of 2 to 6 months for a sufficient amount of antitoxin to develop to inhibit the Schick test. Six months after the last injection all persons should be retested with the Schick test, because a small percentage fail to become immune. Such persons (those who still show a positive Schick reaction) should be given another course of 3 injections of diphtheria toxin-antitoxin and again retested 6 months after the last injection.

If the Schick test is properly done, with a proper toxin dilution, a negative reaction shows that sufficient antitoxin is present in the body to render that person immune to diphtheria.

#### 4 Duration of Immunity

The immunity produced by the proper injection of toxin-antitoxin mixture, as a rule, lasts for more than 7 years. At the end of this time, it is advisable to determine the possible return of susceptibility by means of the Schick test.

The recent administration of diphtheria anti-

toxin to an individual interferes with and retards the development of active immunity following the injection of toxin-antitoxin mixture. In such cases wait six weeks before giving toxin-antitoxin mixture.

### III. RECOMMENDATIONS

1 Children under six months of age should have a Schick test performed and if negative they should be retested between six months and one year of age. If they give a positive reaction, they should be immunized with diphtheria toxin-antitoxin mixture.

2 All children between the ages of six months and ten years should be immunized with three injections of diphtheria toxin-antitoxin mixture, one week apart without having a preliminary Schick test. The majority of children of this age group are susceptible and therefore the Schick test is not necessary.

3 All children between ten years and eighteen years of age should have the Schick test and if it is positive they should receive three injections of diphtheria toxin-antitoxin mixture, unless they show a combined reaction, when the toxin-antitoxin mixture may be given in divided doses beginning with 0.1 cc., then 0.2, 0.5 and 1 cc. at weekly intervals.

4. All individuals above eighteen years of age who are exposed to diphtheria or may come in contact with it should have the Schick test performed and be immunized with diphtheria

toxin-antitoxin mixture with the same provision, however, as stated in the previous paragraph.

5 All persons receiving three doses of diphtheria toxin-antitoxin mixture should be retested with the Schick test six months after the last injection and if they should still give a positive reaction, they should receive three more injections of diphtheria toxin-antitoxin mixture and be again retested six months after the last injection.

The percentage of children immunized by one series of three injections of toxin-antitoxin mixture will vary with the age and social groups, and will also depend upon the previous prevalence of diphtheria in the community in which the child lives. As a rule a large proportion will be immunized.

Any alleged reactions following the use of the Schick test or toxin-antitoxin and any alleged cases of diphtheria occurring in individuals originally Schick negative or negative after toxin-antitoxin treatment should be immediately and thoroughly investigated and every such case reported to the State Department of Public Health.

In order to avoid any undesirable reactions, to secure the most reliable results and to immunize the highest percentage of immune persons after toxin-antitoxin treatment, follow precisely all the directions given above and contained in the directions furnished with every package of these products.

## NEW DEVELOPMENTS IN NEW ENGLAND DEACONESS ASSOCIATION HOSPITALS

### A Report to the Trustees

**Y**OUR Committee is happy to undertake the raising of the first million dollars needed for the future development of the Deaconess Hospitals because of their interest and faith in the Association and its work. Moreover, they will seek funds for the Deaconess and Palmer hospitals confidently because of the following reasons:

- 1 *Every dollar given is a dollar asset.* Your Committee constitutes the organization. No one is paid for services. No one receives a commission. Indeed there are no expenses for the undertaking, because one of the Trustees has guaranteed the requisite amount for the purpose. Therefore, a dollar given to the Deaconess Hospitals is ipso facto one hundred per cent efficient.
- 2 *Undenominational in character.* The Deaconess Hospitals are undenominational in character. At the present time fourteen different religions are represented by the patients, and almost as many by the staff, nurses and employees. There is no discrimination. It is true the Deaconess As-

sociation Hospitals were founded by and have remained under the control of Methodists, but so generous has been the support of the general public that the Association voted last year to add non-Methodists to the Corporation in recognition of their undenominational interest. In consequence several distinguished men representing various creeds have accepted responsible positions as members of the Board of Trustees. Those thus far appointed are Mr. Robert G. Dodge, Mr. William L. Shearer, Ex-Governor Channing Cox, and Mr. Irving L. Morse.

- 3 *Increased efficiency in management.* The Deaconess Association Hospitals have grown from small beginnings. The original hospital was opened in 1896 at 691 Massachusetts Avenue with twelve beds, and now the beds of the two hospitals number 250. The reputation to date has been gained largely by earnest individual work. But the Deaconess and Palmer Hospitals are progressive and no one associ-

exactly the one tenth cubic centimeter injected in both cases. Do not guess at the amount from the size of the bleb or wheal produced by the injection. If the point of the needle has been properly inserted, with the lumen uppermost and visible through the skin, the injection should produce a small, slightly raised white area or wheal, which should move with the skin and disappear in about one-half hour. The test will fail if the injection is made under the skin. The injection causes little or no pain, it is not followed by constitutional symptoms, and the site of injection requires no subsequent care.

#### 4 The Negative Reaction

The results of the test should be observed on the fourth day—oftener if possible.

Following the injection no signs are present on either arm except the slight and fleeting mark incident to the insertion of the needle. If the test has been properly done, with the proper toxin dilution, the absence of reaction indicates immunity to diphtheria.

#### 5 The Positive Reaction

A positive reaction begins to appear on the eighth day ("Toxin Dilution" injection) in 24 to 36 hours and is characterized by a circumscribed area of redness and slight infiltration, which measures 1 to 2 centimeters in diameter. It develops gradually, reaches its greatest intensity on or about the fourth day, then fades very slowly, leaving a scaly, brownish pigmented spot, which eventually disappears. There is no reaction at the site of the injection of the "Heated Toxin Dilution." The positive result of the test signifies that the individual possesses little or no antitoxin in the blood, and therefore may contract the disease.

#### 6 The Pseudoreaction

In some individuals, particularly in adults, a reaction develops which may be confused with a positive reaction. Owing to a hypersensitivity of some persons to the protein of the diphtheria bacillus present in the toxin, a local reaction may appear at the point of injection. This reaction is differentiated from the true positive reaction by means of the injection of the heated toxin dilution. If a reaction develops at the same time at the sites of both injections, runs a similar course, reaching a maximum of intensity on the third day and then fading, the reaction is classed as a pseudoreaction—the individual is hypersensitive to the protein of the diphtheria bacillus but is immune to diphtheria.

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distinct, while the control test will show only a blotchy area of pigmentation representing the pseudoreaction elements of the test. If the test is positive, the reaction at the end of 96 hours will be much more marked at the site of the unheated toxin injection. The negative and the pseudoreactions indicate immunity, the positive and the combined reactions, susceptibility to diphtheria. A short experience in reading the reactions will suffice to enable one to make a correct interpretation of the results.

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#### 2 Dosage

Three injections of 1 cc each at 7 day intervals. Measure the dose in a 1 or 2 cc syringe, and never use a syringe of more than 5 cc capacity. *Do not inject more than 1 cc.*

The injections should be given subcutaneously, preferably over the insertion of the deltoid muscle. Paint the skin at the site of injection with tincture of iodine immediately before the injection, and observe rigid aseptic precautions throughout.

#### 3 Appearance of Immunity

The immunity produced in response to this method develops slowly and it may require a period of 2 to 6 months for a sufficient amount of antitoxin to develop to inhibit the Schick test. Six months after the last injection all persons should be retested with the Schick test, because a small percentage fail to become immune. Such persons (those who still show a positive Schick reaction) should be given another course of 3 injections of diphtheria toxin-antitoxin and again retested 6 months after the last injection.

If the Schick test is properly done, with a proper toxin dilution, a negative reaction shows that sufficient antitoxin is present in the body to render that person immune to diphtheria.

#### 4 Duration of Immunity

The immunity produced by the proper injection of toxin antitoxin mixture, as a rule, lasts for more than 7 years. At the end of this time, it is advisable to determine the possible return of susceptibility by means of the Schick test. The recent administration of diphtheria anti-

tion and is in full view of the operator. I find the panendoscope rather short in certain cases, so I have asked the Wappler Company to make me one two inches longer, and of 22 French calibre instead of 24.

By this method a V-shaped piece is excised from the bladder neck. The first cut is made in the median line, extending from the verumontanum to a point about 2.5 cm above it in the trigone, and being about 1.5 cm in depth. Similar incisions are made a little distance to each side of the first cut, and the knife is then rotated so as to shave off the tissue between the incisions. The tendency is to remove too little rather than too much after the operation the operator should be able to see the trigone when the tip of his endoscope is in the posterior urethra.

The operation can be done under sacral anesthesia, and because of the lack of bleeding, the absence of shock and the brief confinement to bed, it may be employed without much risk in cases whose general condition contra-indicates a more extensive operation. It is particularly adapted to patients whose obstruction is due to a median bar or to carcinoma of the prostate. Even if relief is not permanent, the operation may be repeated.

This operation is not an easy one by any means. It requires care and patience, and the exercise of judgment as to the situation and the extent of the incision. It is not advocated as a substitute for prostatectomy, but in the few cases in which I have employed this method I was so amazed at the results that I thought it best to report them. This operation offers great possibilities in bladder neck surgery in patients who are now refused surgical relief. A report of four cases follows.

#### CASE 1 Median Bar

A man of 52 complained of difficulty in urinating which he had noticed for five years. A small stream and occasional terminal dysuria. He voided eight to ten times by day and five or six times at night. He had had gonorrhea twenty years before.

Examination showed several tight strictures of the bulbous urethra. These were gradually dilated with filiforms, sounds and the Kollman dilator up to 38 French. A residuum of five ounces persisted. The prostate by rectum was boggy and soft, the vesicles slightly enlarged. The secretion showed twenty to thirty leucocytes per field. Cystoscopy showed considerable trabeculation of the bladder wall. The view of the trigone was partly obstructed by a definite median bar. The lateral lobes were not enlarged and no diverticula were seen.

December 23 1927 Under sacral anesthesia the bar was excised with the electrotome as described above. The bleeding was negligible and no indwelling catheter was used. Three hours after operation the patient voided slightly pinkish urine with some burning sensation.

December 26-1927 He was discharged from the hospital.

January 14-1928 The patient reported at my office. His urine was slightly hazy. He had a large forceful stream, no nocturia, no burning sensation and no residual urine.

#### CASE 2 Middle and Lateral Lobes

A man 90 years old complained that for 10 or 15 years he had had difficulty in urinating and lately had been troubled by slight incontinence of urine. He voided 10-15 times by day and 10 or 12 times at night, and had incontinence of feces.

Examination The patient was a drowsy old man whose appearance suggested uremia. Both legs were edematous and his bladder dullness extended almost to the umbilicus. His pupils reacted sluggishly, his knee jerks were absent. No Romberg's sign. His heart sounds suggested myocarditis. Blood pressure 130/90. The urine was clear with no albumen and no sugar. By rectum the prostate was only very slightly enlarged and was not hard. There was no stricture of the urethra. I thought at first that I would drain him for a few days by catheter but as his urine was not infected and as the operation does not cause much shock I decided to operate at once.

February 11 1928 He was given sacral anesthesia, which was not as successful as in the other cases. There was complete anesthesia on the right side but on the left side only partial anesthesia. The tightness of the bladder neck offered considerable difficulty to the passage of the endoscope. Cystoscopy showed a trabeculated bladder but no diverticula. The middle and lateral lobes were enlarged. I excised a V shaped section from the middle lobe, shaved down about 1 cm from the right lobe and cut a fissure in the left lateral lobe. Enough of a channel was made to allow of easy rotation of the instrument. There was a little more bleeding than in Case 1 but this ceased after washing out the bladder. The bladder was drained by catheter for forty-eight hours; the patient would not allow the catheter to remain any longer. The urine was pinkish for three days then cleared. The patient stayed in the hospital for eight days. When he left, the edema of the legs had subsided and the signs of uremia had cleared up. Because of the pain on urination he insisted on being catheterized.

February 21 1928 The patient was now voiding normally. The residuum was only three ounces.

#### CASE 3 Median Bar and Middle Lobe

A man of 53 who had had gonorrhea ten years before, was suffering from dysuria, urgency, frequency and pain in the perineum. These symptoms he had had for 4 or 5 years. He complained of dizziness. His blood pressure was 190/130 and his vessels were sclerotic. The urine was clear, albumen spt., sugar present, sediment rare, red blood cells a few, leucocytes. The residuum was four ounces. By rectum the prostate was small, smooth, soft and not tender. The vesicles were not palpable and the secretion showed only 5-6 leucocytes per field. Wassermann test negative.

Cystoscopy showed some trabeculation of the bladder wall. There was a definite median bar and a larger middle lobe.

December 14-1927 Under sacral anesthesia a channel about 1 cm deep was cut in the middle lobe. There was practically no bleeding. Five hours after operation the patient passed urine of a slightly pinkish color.

December 19-1927 He was discharged from the hospital.

January 13 1928 Urine slightly hazy, no residuum. No frequency or urgency. There is still slight burning on urination.

#### CASE 4 Carcinoma of the Prostate

A 73 year-old man had for 3 or 4 years been troubled by frequent urgent urination and occasional incontinence. He voided 10-12 times a day and 8-10 times at night. The urine was hazy and showed a spt. of albumen, no sugar, much pus. The prostate was small, hard, fixed, typically malign.

ated with them is satisfied with even their present reputation. Improvements in individual effort may not be possible, but with this rapid expansion improvements must be possible in efficiency, in organization, equipment, management and technique. The hospitals are anxious to be examined and to be told how they may be made better. As a result, through the financial contributions of the Deaconess and Palmer Staffs and the courtesy of the Trustees of the Peter Bent Brigham Hospital, their able and efficient Superintendent, Dr. Joseph B. Howland, is making a survey of the management and administration of the Deaconess Institutions and will submit to the Deaconess Corporation such recommendations as he deems wise. Your Committee considers the help being rendered by Dr. Howland to be of inestimable value. Donors can be assured that every dollar given for Deaconess Hospital activities today will mean more than a dollar, because it will carry a Joseph B. Howland dividend.

- 4 *Financial Stability* Too often in the past hospital construction has outstripped endowment. Your Committee in charge of the collection of funds believes that for every dollar it collects for buildings it should provide a dollar for endowment or unrestricted funds. We, as a Committee, look to Dr. Howland's report to show what our hospitals ought to have in the way of additional buildings and capital for efficient well-rounded and economical operation.
- 5 *The George F. Baker Clinic for Chronic Disease at the Deaconess Hospitals. Its Significance* The first quarter of the first million is at hand. It has come from that banker and philanthropist, Mr. George F. Baker, who by efficient length of days is a stimulus to the middle-aged and has now become the Founder of the Clinic for

Chronic Disease at the Deaconess Hospitals. This Clinic signifies an important reemphasis on a neglected phase of medicine. Its forty beds will provide for the acute ills of the chronic. A diabetic can have appendicitis or gall stones and need temporary relief and expert care, a rheumatic case seeks help during an exacerbation, a digestive ailment requires a fresh inventory and readjustment, a weakened heart comes for revaluation, a patient with goiter for a new lease of life. These beds are created for the young and the old, in order that chronic handicaps can be surmounted by education, medical treatment, or surgical intervention. The George F. Baker Clinic for Chronic Disease will be a hospital oasis for the chronic patient at which he can be refreshed for his journey through life which it will teach him to complete with courage and eventual success. The head of the George F. Baker Clinic by the terms of the gift is to be appointed by the Deaconess Association after consultation with the Harvard Medical School. This provision thus forges another link of cooperation between two institutions and will promote the usefulness of each to the community.

Your Committee believes that the many acute ills of the chronic and the education of the chronic are replacing the dwindling prevalence of acute infectious diseases and tuberculosis and the Deaconess Association Hospitals intend to be in the forefront of this tendency to provide for their relief and cure.

- 6 *Disposal of Funds* During the period of collection of the million dollars desired the First National Bank of New York and the First National Bank of Boston have consented to act as depositaries of sums received. All sums given will draw interest either directly from these banks or by investment.

## THE NEW METHOD OF RELIEVING CERTAIN PROSTATIC OBSTRUCTIONS

BY P. N. PAPAS, M.D.\*

THE chief causes of obstruction at the bladder neck are hypertrophy of the prostate, with enlargement of the middle or lateral lobes, or both, median bars, contracture following prostatectomy, carcinoma. According to statistics in about 20% of obstructing prostates the obstruction is due to carcinoma and in 15% to median bars.

C. W. Collings has devised an instrument which he calls an *electrotome*, by means of

which a tight bladder neck can be cut away so as to leave a channel through which the bladder may be emptied. The apparatus consists of an electrode introduced through a McCarthy panendoscope and supplied with a high frequency current of about 1,400,000 oscillations per second derived from a specially built high frequency machine. A special irrigating sheath devised by Collings is employed with the panendoscope. With this apparatus the obstructing bar can be cut away without hemorrhage, the field of operation is under continuous irriga-

\*For record and address of author see This Week's Issue page 870

# NEW HAMPSHIRE MEDICAL SOCIETY

The One Hundred and Thirty-Seventh Annual Meeting of the New Hampshire Medical Society

HELD AT MANCHESTER, N H

TUESDAY AND WEDNESDAY, MAY 15-16 1928

## OFFICERS FOR 1928 1929

*President* Joseph J Cobb Berlin  
*Vice President* Henry O Smith Hudson  
*Secretary Treasurer* D E Sullivan Concord

### Councillors

	Term Expires
A. A Pratte Cheshire County	1929
Emery M Fitch Sullivan County	1929
Henry H Amsden Merrimack County	1930
George C Wilkins Hillsborough County	1930
Abram W Mitchell Rockingham County	1931
Harry O Chesley Strafford County	1931
H H Marks Coos County	1932
F E Clow Carroll County	1932
Clifton S Abbott Belknap County	1933
Arthur T Downing Grafton County	1933

### Trustees

Alpha H Harriman Laconia	1929
Ira J Prouty Keene	1930
Thomas W Luce Portsmouth	1931

### House of Delegates

*Speaker* Elmer H Carleton Hanover  
*Vice-Speaker* Harry O Chesley, Dover

## HOUSE OF DELEGATES

The President of the Society *ex-officio*  
The Vice-President of the Society *ex-officio*  
The Secretary Treasurer of the Society *ex-officio*.

### ROCKINGHAM COUNTY

Samuel T Ladd Portsmouth  
Thomas W Luce Portsmouth

### MERRIMACK COUNTY

Harold J Connor Concord  
Thomas P Dudley Concord  
William P Clough New London

### CHESHIRE COUNTY

George S Emerson Fitzwilliam  
Frank Dinsmoor Keene

### GRAFTON COUNTY

G A Weaver Bradford Vt  
A W Burnham Lebanon  
F P Lord Hanover

### SULLIVAN COUNTY

Howard A Hanaford Newport  
Henry C Sanders Jr Claremont

### HILLSBOROUGH COUNTY

D G Smith Nashua  
F P Scribner Manchester  
A L Wallace Nashua  
H O Smith Hudson  
John F Holmes Manchester

### BELKNAP COUNTY

R W Robinson Laconia  
Charles H Harmon Meredith

### CARROLL COUNTY

Fred E Clow Wolfeboro  
B Frank Horne Conway

### STRAFFORD COUNTY

J C Lawlor, Dover  
D L Stokes Rochester

### COOS COUNTY

R E Wilder Whitefield  
Homer H Marks Berlin

## ALTERNATE DELEGATES

### BELKNAP COUNTY

A H Harriman  
C S Abbott.

### ROCKINGHAM COUNTY

D C McLachlan  
C W Hanaford

### COOS COUNTY

N B Dresser  
J W Blodgett.

### CHESHIRE COUNTY

A W Hopkins  
W H Lacey

### HILLSBOROUGH COUNTY

C H Cutler  
J F Robinson  
O S Maynard  
Oscar Burns  
B E Sanborn

### GRAFTON COUNTY

L E McKinlay  
H C Pickwick  
F P Dwinell

### STRAFFORD COUNTY

J J Buckler  
R J Bennett

### SULLIVAN COUNTY

R H Brooks  
O C Young

### MERRIMACK COUNTY

C P Ballard  
C E Butterfield  
A. A Beaton

### CARROLL COUNTY

No report

*Delegate to American Medical Association*

D E Sullivan Concord 1928 1929

*Alternate Delegate American Medical Association*

David W Parker Manchester 1928 1929

*Delegates to Council on Medical Education and Hospitals A M A*

George C Wilkins Manchester

*Delegate to Bureau of Health and Public Instruction*

Howard A. Streeter, Manchester

*Delegates to New England Medical Council*

Joseph J Cobb President.

D E Sullivan Secretary

T W Luce term expires 1929

D W Parker term expires 1930

G C Wilkins term expires 1931

*Anniversary Chairman*

Homer H Marks

nant. The vesicles were not palpable. The residuum was sixteen ounces.

Cystoscopy showed a markedly trabeculated bladder; the lateral lobes of the prostate were very prominent and there was a median bar.

February 16 1928. Under sacral anesthesia the median bar was excised and fissures were cut in the lateral lobes near their lower limits. A catheter was left in the urethra for forty-eight hours. The day after operation the patient had chills and a temperature of 101 F. The catheter appeared to be plugged, after bladder lavage and forced fluids the temperature became normal. The second night after operation the patient pulled the catheter out and began to urinate freely. He was discharged four days later.

March 5 1928. The patient now has no urgency or incontinence, and only slight burning. Nocturia twice instead of 8 or 10 times. Residuum now two ounces. He was advised to have deep X-Ray Therapy.

In these last two cases it is uncertain how long

the relief obtained from this operation will last. However, even if it does not last more than two or three years, it can be repeated with but little risk to the patient.

#### CONCLUSIONS

1. Urinary obstruction due to a prostatic median bar can be completely relieved by excision of the bar by means of the Collings electrotome.

2. In urinary obstruction due to prostatic carcinoma or to middle or lateral lobe enlargement, this operation will give at least temporary relief, and may be employed if prostatectomy is contra-indicated.

3. This operation is safer than any other method, as there is no danger of sloughing or of hemorrhage.

H. W. N. Bennett  
E. P. Hodgdon  
Harry S. Platts  
E. O. Crossman  
Zatae S. Straw  
A. S. Mangurian  
H. T. French  
F. P. Argue  
J. N. Friberg  
E. C. Batchelder  
J. A. Ferguson  
B. L. Freeman  
W. A. Thompson  
P. A. Pion  
C. H. Babbitt  
Alfred Daudelin  
J. J. Buckley  
D. L. Stokes  
John H. Holmes  
B. W. Baker  
A. J. Provost  
R. H. Brooks  
R. W. Robinson  
J. B. Woodman  
David R. Brown  
E. J. Delaney  
F. W. Snow  
  
N. W. MacMurphy  
D. J. Sullivan  
C. L. Smart  
L. J. Lacasse  
Frederick N. Brown  
Walter R. Sanders  
Granville E. Hoffses  
Carleton R. Metcalf  
Montfort Haslam  
George W. Hatch  
C. J. Morrison  
T. F. Rock  
R. J. Joyce  
John G. W. Knowlton  
George S. Hazard  
L. T. Togus  
John T. Murray  
E. B. Swett  
James S. Black  
Fred E. Bryar  
B. A. Chapman  
Damase Caraan  
Z. A. Lavole  
J. S. Bragg  
H. E. Powers  
W. P. Grimes  
C. E. Butterfield  
Wilfred Biron  
J. E. Lacomsiere  
Avery M. Foster  
M. A. Sweeney  
C. I. Cole  
Charles H. Dolloff  
Arthur B. Howard  
R. J. Bennett  
Fred Fernald  
A. L. MacMillan Jr  
Robert O. Blood  
F. E. Spear  
James W. Jameson  
Walter L. Kelso  
Oscar C. Young  
S. T. Ferguson  
B. G. Moran  
C. F. Nutter  
E. B. Eastman  
C. W. Hannaford  
H. B. Carpenter  
George H. Clarke

Manchester  
Lakeport  
Trov  
Bedford  
Manchester  
Manchester  
Hanover  
Pittsfield  
Manchester  
Dover  
Lancaster  
Suncook  
Manchester  
Littleton  
Nashua  
Nashua  
Dover  
Rochester  
Manchester  
Laconia  
Manchester  
Claremont  
Laconia  
Franklin  
Concord  
Concord  
Newburyport,  
Mass  
Belmont  
Manchester  
Laconia  
Manchester  
Providence, R. I  
Derry  
Manchester  
Concord  
Concord  
Wilton  
Colebrook  
Nashua  
Nashua  
Exeter  
Hollis  
Manchester  
Manchester  
Grasmere  
Nashua  
Concord  
Springfield  
Manchester  
Manchester  
Manchester  
Hillsboro  
Concord  
Manchester  
Manchester  
Candia  
Nashua  
Goffstown  
Concord  
Concord  
Dover  
Nottingham  
Concord  
Concord  
Woodsville  
Concord  
Hillsboro  
Charlestown  
Goffstown  
Nashua  
Nashua  
Portsmouth  
Portsmouth  
Portsmouth  
Concord

Jules H. Brien  
H. L. Taylor  
G. A. Fredick  
S. Fraser  
Ellen A. Wallace  
Edwin Dearborn Stevens  
Charles F. Keeley  
F. E. Kittredge  
Victor Potvin  
George M. Crowell  
C. S. Gilman  
J. L. McLaughlin  
Abbey N. Little  
Sarah M. Sidis  
Anna M. Littlefield  
Charles H. Parsons  
A. W. Mitchell  
L. G. Dearborn  
H. A. Des Brisav  
C. A. Weaver  
J. C. Huckins  
E. T. Drake  
E. Henry Thompson  
F. R. Sargent  
A. P. Richmond  
Charles S. Walker  
J. J. Brosnahan  
Philip A. Kimball  
H. M. Wiggin  
Percy B. Goetschius  
George M. Watson  
Edwin T. Wyman  
John Hammond  
J. T. Harlissis  
George L. Hilton  
H. E. Thompson  
F. E. Sweeney  
H. M. Morse  
F. S. Eveleth  
Emil Bogen  
P. H. Greeley  
F. L. Hawkins  
Chancey Adams  
Robert M. Deming  
Robert J. Graves  
Henry H. Amsden  
Walter D. Minigan  
G. D. Tibbetts  
M. H. Towle  
S. G. Morrill  
Carroll R. Murch  
William E. Reed  
Roger G. Osterheld  
A. S. Merrill

Concord  
Portsmouth  
Portsmouth  
New Boston  
Manchester  
Francestown  
Claremont  
Nashua  
Claremont  
Suncook  
Lakeport  
Farmington  
Laconia  
Portsmouth  
New London  
Penacook  
Epping  
Manchester  
Hanover  
Manchester  
Plymouth  
Franklin  
Hampton  
Pittsfield  
Dover  
Keene  
Keene  
Pittsfield  
Whitefield  
Manchester  
Manchester  
Boston  
New Haven, Conn.  
Manchester  
Milford  
Nashua  
East Jaffrey  
Peterboro  
Concord  
Los Angeles Cal  
Portsmouth  
Meredith  
Concord  
Glenciff  
Concord  
Concord  
Manchester  
Antrim  
Manchester  
Concord  
Nashua  
Nashua  
Concord  
Manchester

## PROCEEDINGS OF THE 137th ANNIVERSARY

### HOUSE OF DELEGATES

MANCHESTER, MAY 14, 1928

THE meeting was called to order by the Speaker, Dr. Fred E. Clow, of Wolfeboro, at 7 30 P. M.

The Secretary called the roll and a quorum was declared present.

On motion the reading of the minutes of the last meeting was omitted.

THE SPEAKER *Mr. President and Fellows*—I am deeply sensible of the honor you have conferred on me in permitting me this opportunity to preside over the House of Delegates at the one hundred and thirty-seventh meeting of the



## Necrologist

George H. Clarke

## STANDING COMMITTEES

## SCIENTIFIC WORK

D. E. Sullivan  
H. A. Des Brisay  
F. P. Scribner

## PUBLIC POLICY AND LEGISLATION

Fred E. Clow  
Emery M. Fitch  
Charles Duncan  
President  
Secretary Treasurer

## PUBLICATION

D. E. Sullivan  
H. H. Amsden  
Raymond H. Marcotte

## ARRANGEMENTS

Hillsborough County Medical Society

## TUBERCULOSIS

R. B. Kerr  
R. M. Deming  
A. L. Wallace

## MENTAL HYGIENE

Benjamin W. Baker  
Charles H. Dolloff  
Leslie E. McKinlay

## AMENDMENTS TO THE CONSTITUTION AND BY LAWS

Henry O. Smith  
Fred E. Clow  
Thomas W. Luce

## HOSPITAL STANDARDIZATION

John C. Lawlor  
John P. Bowler  
Eugene B. Eastman

## CONTROL OF CANCER

Fred E. Clow  
George C. Wilkins  
H. N. Kingsford

## CLINICAL MEETING AT HANOVER

Emery M. Fitch  
Elmer H. Carleton  
John F. Gile

## DELEGATES TO STATE SOCIETIES

Matne Homer H. Marks  
 Vermont Oscar C. Young  
 Massachusetts James T. Greeley  
 Connecticut Richard W. Robinson  
 Rhode Island Deering G. Smith

## REGISTRATION

Homer H. Marks	Berlin
S. T. Ladd	Portsmouth
Emery M. Fitch	Claremont
Thomas M. Luce	Portsmouth
F. M. Dinsmoor	Keene
Fred E. Clow	Wolfeboro
D. E. Sullivan	Concord
F. P. Scribner	Manchester
W. R. Clough	New London
J. C. Lawlor	Dover
H. C. Sanders Jr.	Claremont
George C. Wilkins	Manchester
Charles A. Eastman	Berlin
Henry Schmitz	Chicago
D. C. Norton	Manchester
A. W. Burnham	Lebanon
George S. Emerson	Fitzwilliam
Frederic P. Lord	Hanover
Elmer M. Miller	Woodsville
M. P. Badger	Manchester
C. W. Colby	Exeter
A. J. Pitman	Manchester
J. C. Tappan	Derry

John F. Gile  
 Norman B. Dresser  
 John Deitch  
 B. E. Sanborn  
 R. E. Stone  
 S. G. Davis  
 C. J. Monette  
 W. R. Garland  
 Morris Fishbein  
 Mary Shepard Danforth  
 R. G. Ingalls  
 F. J. Drury  
 I. L. Carpenter  
 G. V. Fiske  
 Luther A. Marsh  
 Emdon Fritz  
 Richard E. Wilder  
 George A. Weaver  
 Howard A. Streeter  
 H. A. Hannaford  
 A. L. Wallace  
 Henry Ladd Stickney  
 Joseph J. Cobb  
 Henry O. Smith  
 Benjamin P. Burpee  
 A. W. Petit  
 P. Bergeron  
 Deering G. Smith  
 C. E. Dunbar  
 E. J. Brown  
 Charles C. Rogers  
 Bruce Snow  
 Robert B. Kerr  
 Ralph H. Barker  
 Blanche H. Barker  
 E. H. Carleton  
 C. P. Ballard  
 D. W. Parker  
 J. F. Robinson  
 R. G. Blanchard  
 Russell Wilkins  
 H. J. Connor  
 G. S. Foster  
 R. W. Tuttle  
 Oscar Burns  
 L. R. Hazzard  
 Walter H. Abbott  
 A. Alexander Macleay  
 F. J. Pherson  
 Louis W. Flanders  
 E. D. Milville  
 C. F. Flanders  
 G. W. Weymouth  
 H. O. Chesley  
 M. A. H. Hart  
 O. H. Hubbard  
 J. C. Gagnon  
 Robert Flanders  
 F. N. Rogers  
 T. J. Morrison  
 E. E. Lake  
 A. M. Lavallee  
 N. D. Michou  
 J. E. Larochelle  
 S. L. Hebert  
 Charles Chirug  
 George F. Dwinell  
 D. P. Mocas  
 H. N. Kingsford  
 Anna Corliss Rudd  
 George L. Bastian  
 A. H. Harriman  
 N. B. Webber  
 Clarence O. Coburn  
 Charles Duncan  
 H. S. Hutchinson  
 J. A. Hunter  
 A. J. LaFrance  
 E. O. Jones  
 W. A. Bartlett

Hanover  
 Berlin  
 Manchester  
 Manchester  
 Beverly, Mass.  
 Nashua  
 Plymouth  
 Plymouth  
 Chicago  
 Manchester  
 Berlin  
 Londonderry  
 Manchester  
 Manchester  
 Nashua  
 Manchester  
 Whitefield  
 Bradford, Vt.  
 Manchester  
 Newport  
 Nashua  
 Rutland, Mass.  
 Berlin  
 Hudson  
 Manchester  
 Nashua  
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 Farmington  
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 Derry  
 Derry  
 Hanover  
 Penacook  
 Manchester  
 Manchester  
 Dover  
 Manchester  
 Concord  
 Manchester  
 Alton  
 Milford  
 Portsmouth  
 Warner  
 Manchester  
 Manchester  
 Dover  
 Manchester  
 Manchester  
 Lyme  
 Dover  
 Milton  
 Keene  
 Manchester  
 Manchester  
 Manchester  
 Somersworth  
 Hampstead  
 Suncook  
 Manchester  
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 Manchester  
 Manchester  
 Nashua  
 Hanover  
 Durham  
 Manchester  
 Laconia  
 Manchester  
 Manchester  
 Concord  
 Milford  
 Dover  
 Laconia  
 Manchester  
 Manchester

20—Alice Craig, Multigraphing.	11 06
23—Ardene Lance, Miss Leary, Registration Clerks	16 00
23—Wentworth Hotel Rooms	72 60
24—Wentworth Hotel Wiring	58 00
28—Portsmouth Power Co Wiring	18 86
29—Richard Walder Printing	16 00
30—Portsmouth Power Co Electric Current	13 12
July 1—Postmaster, Envelopes	10 00
D E Sullivan Salary	100 00
Salary Clerk	75 00
Incidentals	7 62
1—Randall Press Circulars	26 00
7—W P Clare Postage	12 00
18—P F Casey Wiring Booths	7 50
Aug 1—Ira J Prouty	1000 00
8—Postmaster Postage	4 00
8—Alice Craig Stenographer	68 36
14—Belle Tuttle Ladies Aux.	100 00
24—F E Clow Cancer Committee	20 00
29—Boston Medical and Surgical Journal Stenographer	8 95
Oct 13—Ezra Jones Entertainers	100 00
Dec 31—D E Sullivan, Secretary Salary and Clerk	175 00
F E Clow Com Clinical Meeting	20 00
Portsmouth Chamber of Commerce	14 74
J F Holmes M D State Correspondent	25 00
W P Clare M D Expenses Exhibit	97 04
	\$2152 76
Balance	249 34

Respectfully submitted, \$2402 10

D E SULLIVAN Secretary Treasurer

The report of the Secretary was referred to the Committee on Reports and that of the Treasurer to the Trustees for audit

## REPORTS OF COUNCILORS

## CHESHIRE COUNTY

The Cheshire County Medical Society held two meetings at the Elliot Community Hospital Keene N H., during the year 1927 Both meetings were well attended We believe now that it is going to be easier in the future to get some of our members to read a paper at our meetings The most important meeting was the one held in November The society felt sorry to learn that Dr W Robb of Marlow had been reinstated without its knowledge by the State Board of Registration in Medicine As nobody had a word of congratulation for the Board a motion was made by Dr W Lacey seconded by Dr Ira J Prouty that the society express its displeasure to the State Board of Registration in Medicine Adopted The vote was unanimous The medical profession here feels humiliated by the action of the State Board of Registration in Medicine in reinstating Dr Robb whose specialty in medicine and surgery is too well known all over New England It seems to us that a physician whose standing is not good enough for Massachusetts ought not to be good enough for New Hampshire The society also voted to instruct our delegates to vote in favor of the so-called Maine Defensive Plan for Physicians

A A PRATTE, Councilor

## CENTER DISTRICT AND MERRIMACK COUNTY

The Society has held three meetings during the past year July 13th at the Snow Shoe Club in Concord Dr Emery M Fitch, President of the New Hampshire Medical Society was the guest of the day and spoke on The Development of the Small Hospital

The annual meeting was held January 11th, 1928

at the Eagle Hotel The speaker of the day was Dr C H Lawrence of Boston, who spoke on The Endocrine Element on Certain Chronic Syndromes

May 11th the meeting was held at the Eagle Hotel The principal paper was a report of a case, by Drs MacMillan Woodman and Beaton Hemorrhage from Traumatic Infection of the Maxillary Antrum

H H AINSDEY Councilor

## ROCKINGHAM COUNTY

The annual meeting was held at The County Hospital Brentwood, on October 13th 1927

The day was miserable but the attendance was surprisingly good The State President, Dr Emery Fitch, graced the occasion by his presence and favored us with a happy and instructive address

There were four papers by New Hampshire men which were of high grade and called out full and profitable discussion

Dr Luce of Portsmouth discussed fully and clearly the Liability Insurance situation and answered many questions There seems to be a growing interest in the matter

At the kind invitation of the Portsmouth members a midyear meeting was held at The Portsmouth Hospital which was a perfect success and we hope will become a regular meeting

The A. M. was devoted to a most interesting dry clinic then followed a splendid lunch and a high grade literary program profitably occupied the afternoon hours

The death of Dr Walter Tuttle removed our long time secretary but his mantle has happily fallen upon the broad shoulders of Dr John G Knowlton and we look into the future with courage

A W MITCHELL, Councilor

## HILLSBOROUGH COUNTY

Hillsborough County Medical Society held its regular two meetings during the past year The Fall meeting was held as usual at the Manchester Country Club and the Spring meeting at the Nashua Country Club Both meetings were well attended and at both meetings papers were unusually excellent Several papers brought out interesting and general discussion Next Fall this society will make a change in its usual program and will meet in the town of Peterborough Members are looking forward with much interest to this meeting

Both the Nashua and Manchester Medical Societies have had their usual nine or ten meetings between September and June

Hillsborough County Society now numbers 147 members During the past year there have been four deaths the deceased members being Dr Isalah G Anthoine Dr Albert F Mulvanity Dr Augustus W Shea of Nashua and Dr Evariste C Tremblay of Manchester

GEORGE C WILKINS Councilor

## CARROLL COUNTY

The Carroll County Medical Society has held one meeting during the year Our organization is so small that the loss of two members—one by death and one by removal from the State—is deeply felt. One can but be disturbed at the condition of medical practice in a county of 1200 square miles where but three men are under the age of sixty and no man has established a practice permanently in the last 18 years The results of a restricted number of practitioners is not as yet felt by the general population because the two hospitals strategically placed in the county have thus far been able to accept a large part of the burden But the present at least offers little hope for the future of medical care as our people have known it.

FRED E CLOW Councilor

New Hampshire Medical Society I ask your cooperation in performing the duties of the legislative body of our association. As your presiding officer I pledge my best efforts and my whole-hearted interest in the earnest hope that the business of this session shall be cared for expeditiously, with the welfare of the society constantly in mind May I request prompt attendance at the sessions, and the same conscientious attention to official duty that we demand in private business?

The Speaker appointed a Committee on credentials

The Committee collected credentials and reported 22 delegates present

The Speaker announced the following Committees—On Memorials and Communications, Drs Holmes and Robinson, and Committee on Officers' Reports, Drs Smith, Lord and Sanders

#### REPORT OF THE SECRETARY TREASURER

I have the honor to submit my annual report for 1927 At the last annual meeting of the House of Delegates the By laws were subjected to many amendments and it may be that some of them were hurriedly adopted and not thoroughly considered in their full significance by the Delegates It behooves us then to give studious thought to those of most importance and, after mature study of them in all bearings on the future standing of this Society render intelligent judgment. In this connection I would suggest there be a Standing Committee on Amendments to the Constitution and By laws, to which should be referred without debate all proposed amendments to the Constitution or By laws and a report of the Committee returned to this House during the annual session in which they were proposed

There have been held two annual conferences of the Secretaries of the County Societies in 1927 and 1928 with a very evident enthusiasm and interest on the part of those in attendance The benefits to be derived from such an association are many all redounding to the advancement of the high motives justifying our organization and the endorsement and advocacy by this body of a permanent association of the County Secretaries would be most helpful at this time

At the past session of the State Legislature there were many varied bills presented on the Workmen's Compensation involving the status of the physician and surgeon in the matter of fees and the profession had nothing to offer officially the same question will be up next year with good prospects of definite action and we should be prepared to present our side of the case in such form and force as to merit attention

#### Membership

Rockingham County	44
Belknap County	28
Carroll County	10
Merrimack County	68
Hillsboro County	142
Sullivan County	19
Strafford County	31
Grafton County	51
Coos County	32
Cheshire County	30
Not in County	17
	472

Honorary

487

While our percentage of membership to the whole number of physicians listed in the State is commendably high and in excess of that of many States yet there are eligible practitioners here and there who have never been solicited for membership, others who have lapsed in their membership, and more who have some grievance—real or fancied If properly approached, many of these different classes would undoubtedly sign an application blank and be voted in as members throughout the different counties A central committee appointed and authorized and instructed to work in conjunction with the County Secretaries may for readily apparent reasons be the most successful means for the accomplishment of this object.

Again was it our profit and pleasure to attend the regular conference at Chicago in November of the State Secretaries and Editors and beyond question such meetings are of great value and more than repay for the time and expense of attending them

The Constitution and Bylaws of the County Societies have received scant attention some of them I have been informed have not been amended for years, hence cannot be up-to-date Such Constitutions and By laws must not conflict with the Constitution and By laws of the parent society from which they received their charter And there should be a uniformity of all essentials among the different counties This is a matter of vital concern and a committee should be elected at this meeting to examine carefully The Model Constitution for County Societies as arranged by the American Medical Association and with such modifications as are necessary to adapt it to our own needs, recommend it for general adoption

Directed to ascertain plans and propositions in regard to Automobile Liability Insurance, correspondence has been held with a Chicago corporation and their statement should be considered by the Reference Committee

#### Receipts for 1927

Hillsboro County	\$ 564 00
Merrimack County	244 00
Grafton County	180 00
Rockingham County	176 00
Coos County	140 00
Strafford County	120 00
Cheshire County	104 00
Belknap County	92 00
Sullivan County	80 00
Carroll County	51 00
Not in County	80 00
	\$1831 00
Exhibits	520 50
January 1 1926 Balance	50 60
	\$2402 10

#### Disbursements for 1927

Jan 7—F C Barnard, Stenographer	\$4 00
24—B C Smith Stenographer	3 75
Feb 11—H L Chandler Postage	5 00
Mar 17—State of New Hampshire Dept of State (Certified Copy)	75
April 1—B C Smith Stenographer	9 75
16—D E Sullivan Error in Deposit (Personal chk)	5 00
May 4—A H Harriman (Committee on Revision Charter Constitution and By laws 1926)	38 17
11—Warren St Press Letterheads	2 50
June 1—F C Barnard Stenographer	2 00
1—Sentinel Printing Co, Circulars	8 25
6—Bridge & Byron Programs	32 00
8—Postmaster Deposit on Envelopes	99
13—Bastian Bros Badges	33 63

of your Association when policy is put in force, and that the other 25%, if insurable will be given us within the year

Presumably we shall issue a separate policy to each member. It also necessitates a signed application as we want all the members to realize the conditions of the contract, as you know this is a mutual proposition and it is being worked out for the best interest of all concerned.

Particular reference should be made to Article 4 of the policy conditions.

You can rest assured that from our standpoint we will give you Hartford service from beginning to end.

We have brought this plan to the attention of all of the members and we believe its operation is fairly well understood. It is not so much a saving of dollars that we hope to gain by this plan as it is a saving of suits. We are convinced that by this plan we can come to an individual understanding in the Society and as a result it will be possible to prevent unjust suits for malpractice.

In order for the plan to work successfully it will be necessary for each member to agree to testify in the trial of any action against any other member of the New Hampshire Medical Society who is insured by the Company under its Physicians and Surgeons Liability Policy without remuneration.

It will also be necessary to appoint a Medico-legal Committee which will work in conjunction with the Insurance Company in the handling of any threatened action.

We offer for your approval an amendment to the Bylaws of The New Hampshire Medical Society which will provide for the election of this committee, and a plan for the handling of malpractice suits. We would suggest that a temporary committee be appointed by the Speaker of the House of Delegates under advice of the delegates from each county to serve until their individual successors are chosen in the various county society elections.

EMERY M. FITCH  
THOS W. LUCE,  
DAVID W. PARKER,  
D. E. SULLIVAN,  
GEO. C. WILKINS  
*Insurance Committee*

This report was referred to the Committee on Officers' Reports.

#### REPORT OF THE COMMITTEE ON THE CLINICAL MEETING AT HANOVER

To the House of Delegates  
New Hampshire Medical Society

Your committee on Clinical Meeting would report as follows:

By vote of the House of Delegates we were directed to ascertain the feeling of the fellows of the society with reference to a clinical meeting to be held at Hanover at some convenient time. We have investigated the subject with some thoroughness and we feel that such a meeting could be held with reasonable certainty of success. We find that a two-day session of lectures each lasting 50 minutes can be arranged for twenty dollars per man covering all expenses of room, board, care, automobile and expense of medical motion pictures. The expense might be a bit less per person. Five dollars per day will cover the cost of board and room. We find that there should be no dearth of active young consultants from Boston possibly from Portland and Burlington. We believe that the session should be held just before the opening of the college in September. We believe that the plans should not be car-

ried beyond a certain point unless at least fifty men sign for the course and pay twenty dollars in advance with the understanding that a complete refund will be made if the undertaking is not carried through.

To ascertain the attitude of the members a reply postcard was sent to all active members, omitting non-residents and a few retired and honorary members. Four hundred fifty cards were sent and one hundred seventy-two replies have been received. Some men not only sent back the card but also forwarded a letter.

#### Replies to the questions

'If a Clinical Meeting of the State Society is held I will \_\_\_\_\_ will not \_\_\_\_\_ be interested in attending \_\_\_\_\_

Yes \_\_\_\_\_ 134  
No \_\_\_\_\_ 33  
Non-committal \_\_\_\_\_ 4

I think it would \_\_\_\_\_ would not \_\_\_\_\_ be a desirable thing to do \_\_\_\_\_

Yes \_\_\_\_\_ 152  
No \_\_\_\_\_ 1  
Non-committal \_\_\_\_\_ 18

My preference as to lectures would be

1. A variety covering medicine, surgery and obstetrics  
Replies \_\_\_\_\_ 93
2. Obstetrics, gynecology and pediatrics  
Replies \_\_\_\_\_ 24
3. Fractures, dislocations, infections  
Replies \_\_\_\_\_ 33
4. New methods in diagnosis and treatment  
Replies \_\_\_\_\_ 101

The appropriation of twenty dollars was just sufficient to cover the cost of postcards and mailing. A small number of cards left over have been turned over to the secretary-treasurer.

We recommend

1. That a committee be appointed by the President to make all arrangements for a two-day session of intensive lectures and conferences to be held at Hanover at a convenient time in September 1928.
2. That no session shall be held unless the committee feels that a sufficient number have shown active interest in the matter to ensure its success.

FRED E. CLOW  
THOS W. LUCE,  
JOHN F. GILE,  
*Committee*

Referred to the Committee on Officers' Reports.

#### REPORT OF THE COMMITTEE ON THE CONTROL OF CANCER

House of Delegates,  
New Hampshire Medical Society

The Committee on Control of Cancer would again publicly commend the cooperation of Miss Daisy Dean Williamson of the Extension Service, University of New Hampshire, for her help in spreading the message regarding cancer.

We have given five talks on cancer during the year to small groups of people. We have had published some newspaper articles. The recent campaign in Massachusetts has been of help to us in its large amount of space in newspapers read by New Hampshire people.

## SULLIVAN COUNTY

The Sullivan County Medical Society is in a very wholesome condition. There have been three meetings during the year. One of these meetings was given over entirely to business questions, in the other two, scientific papers were presented, which called forth free discussions.

With one exception doctors practicing in this county are members of the County Society. The attendance at the meetings has been proportionately large.

EMERY M FITCH *Councilor*

## COOS COUNTY

Since the last report, only one meeting has been held the Annual in November last, at Gorham. There was a record attendance. It was unusually interesting and instructive because of the active participation by Dr Fitch and Dr Sullivan President and Secretary of the State Society, Dr Bryant Secretary of the Maine State Society, as well as Dr Parker and Dr H O Smith from the Hillsborough County Society. The idea of visiting back and forth between societies both within and without the State makes for good fellowship, is profitable and should be encouraged.

The secretary of our society has made a practice this year of mailing a program of our meetings to every County secretary and I am sure he would greatly appreciate a return of the compliment. The cooperation of the Auxiliary this year has been splendid and was the one thing needed to make the attendance what it should be. On account of the lateness of the season and the bad condition of the roads the Spring meeting has not as yet been held.

During the year there have been three (3) removals and three (3) new members added. The total membership remains the same thirty four (34).

HOMER H MARKS, *Councilor*

The Council of the Society met on Wednesday, May 15th. Drs Wilkins, Chesley, Clow, Mitchell and Amsden were present. Drs Wilkins and Amsden were re-elected chairman and secretary, respectively. There was a general discussion of matters of medical policy, relating chiefly to questions of ethics, medical defence and insurance.

H H AMSDEN *Secretary*

## REPORT OF THE COMMITTEE ON SCIENTIFIC WORK

For several years there has been some criticism of the length of the program, with an added suggestion for an increased opportunity to the members for free discussion. Somewhat influenced by that opinion less than the usual number of papers appear at this meeting and the hope is expressed that a free and healthy discussion will compensate for the change.

Volunteer papers are invited for the consideration of the Committee and suggestions as to the construction of the program are always welcome and are urged.

D E SULLIVAN  
R H BROOKS,  
O H HUBBARD  
*Committee*

This report was referred to the Committee on Officers' Reports.

## REPORT OF THE COMMITTEE ON PUBLICATION

Pursuant to the vote of the House of Delegates of last year accepting the proposition of the *Boston Medical and Surgical Journal* to publish such material as our Society furnished them not to exceed sixteen

pages in any one month to be incorporated in one issue per month, arrangements in conformity to that action were made whereby the *Journal* has been mailed to every member of the Society at an expense of \$1 per year per member plus charge for postage.

The adjustment of some complications in the interpretation of the meaning of the resolution and the construction of the present Bylaws necessitated an unavoidable delay in perfecting the final arrangements on our part but, once decided, the work was carried on with smoothness and despatch. An eleventh hour decision to furnish a complete bound copy to each member was met by the *Journal* with gratifying promptness.

Section 4, Chapter VIII of the Bylaws should be amended to conform to our new procedure by striking out the words "after receiving competitor bids" and any other changes to the wording of the Section deemed necessary.

One of the many advantages in having this *Journal* as our official organ is the gain in the time of getting the doings of the House of Delegates before all of the members of the Society. Now it is printed and distributed within several weeks heretofore such a condition could not be expected for months.

D E SULLIVAN,  
EMERY M FITCH,  
J J COBB  
*Committee*

This report was referred to the Reference Committee on Officers' Reports.

THE CHAIR The report of the Committee on Medical Defense.

DR EMERY M FITCH I think it may be necessary to make a few remarks first. The Committee has been active and has tried to make the Maine plan of insurance understandable. We sent out reply postcards. Two companies made overtures, the U S Fidelity and Guaranty of Baltimore and the other, the Hartford Accident and Indemnity Co. The Committee passed on these Companies and formulated on April 20 the following report.

To the House of Delegates of the New Hampshire Medical Society

Your Committee on Insurance recommends that the New Hampshire Medical Society accept the offer of the Hartford Accident and Indemnity Company made to your President under date of March 15, 1918, said offer being as follows:

"The Hartford Accident and Indemnity Company have agreed to try out the New Hampshire Society on the same basis as the Maine Medical Association, namely at the basic premium of \$20.00, standard limits of \$7,500/15,000.

Additional premium to cover an assistant 50%

Additional premium to cover a registered nurse 50%

Additional premium to cover regular employment at an industrial plant 50%

X Ray diagnostic and photographic work 50%

X Ray specialists \$75.00

These premiums are subject to the regular percentage of increase for Physicians and Surgeons insurance as used at present in New Hampshire. The rates quoted are on the same basis as the Maine Medical.

The Home Office feels that they should have at least 75% of the total membership

# AMENDMENTS TO THE CONSTITUTION

Amend Article IV Section 1 by inserting "in session after Society in first line

## Section 3

Affiliate members shall be those members whose dues are remitted

Renumber Sections 3 and 4 to 4 and 5 respectively

Renumber Section 5 and Section 6 and omit the words not a resident of this State and substitute 'regular' for annual'

## Article XII

New England Medical Council

This Society shall be privileged through its House of Delegates to join with other New England State Medical Societies and to participate in the activities of the New England Medical Council. The New Hampshire Medical Society shall be represented in this body by the President, Secretary-Treasurer and three delegates at large. The three delegates at large shall be appointed by the President one for one year one for two years one for three years annually thereafter he shall appoint one for three years

Make the present Article XII become Article XIII

The Secretary read the six separate amendments to the Constitution, and all of the six amendments were adopted, in each case by a two-thirds vote by a show of hands

**THE CHAIR** Under the head of new business is a proposition to amend Chapter 6 Section 2 of the by-laws by striking out the words "after him" in the fourth line

"And in the event of the death resignation removal or disability of the Vice-President the Speaker of the House of Delegates shall succeed the Vice-President"

**THE CHAIR** This proposed amendment will be on the table for one day and will be taken up tomorrow

Dr Luce offered the following amendment to the by-laws

## CHAPTER —

### Section I

There shall be a standing committee known as the Committee for Medical defense of the New Hampshire Medical Society

### Section II

This committee shall consist of eleven members constituted as follows the Secretary of the State Society and a member from each county society

### Section III

Each county society shall elect its member of this committee at the meeting during which its regular officers are elected. In the event of his resignation incapacity or death a successor for his unexpired term may be elected at a special meeting

### Section IV

The Secretary of the New Hampshire Medical Society shall be the permanent chairman of the committee for Medical Defense. He shall be required to keep an accurate record of the proceedings of the committee also of the accumulated evidence in each case with which the committee has to deal all of which shall be at all times accessible to every member of the New Hampshire Medical Society

### Section V

The Meetings of the Committee shall be held at the call of the chairman at such time and place as

he may deem proper but he may be required to call a meeting at any time by the written request of three members of the committee, the circumstances of which shall be made a matter of record

## Section VI

The Committee shall secure the service of competent legal counsel and be guided by advice to the extent of avoiding entanglements in the courts. No case under consideration by the Committee shall be disposed of in any way except with the approval of counsel

## Section VII

It shall be the duty of each member of the New Hampshire Medical Society upon receiving any information that he may be sued for malpractice to immediately notify the chairman of the committee and at the earliest possible date thereafter to send him a detailed report of the case, together with the names and addresses of the parties to the prospective and also the names of the physicians involved on both sides of the case

## Section VIII

After having received full information from the prospective defendant the chairman shall call upon the member of the committee in the defendant's county to conduct an independent investigation of the case and send a written report. It is expected at the time this investigation is being made that particular attention shall be given to the prospective testimony of the physicians who will appear for the plaintiff if the case goes to trial

## Section IX

Having received all obtainable information the chairman shall call a meeting of the committee

To this meeting the defendant and other physicians involved who are members of the New Hampshire Medical Society may be called to give information regarding the facts in the case all of which shall be made a matter of record

## Section X

After full consideration has been given by the Committee to the reports and detailed information in the possession of the chairman and the testimony of the physicians called before the body the committee with approval of counsel shall decide if the case shall be contested in the courts or an effort be made towards settlement.

The decision shall be considered as binding by the defendant.

## Section XI

Members of this Committee shall be reimbursed for actual expense incurred in their work from funds of the New Hampshire Medical Society or any other organization which may contract to do this

## Section XII

It is fully understood that the Committee for Medical Defense recognizes the rights of the public and that its function is not to offer mass protection to members of the New Hampshire Medical Society actually guilty of malpractice. It is however expected to do its utmost to protect those members who are subjected to the annoyance and entailed expense of defending groundless suits brought from purely mercenary motives

**THE CHAIR** The proposed amendment to the by-laws will be on the table for one day

**DR FITCH** The matter of these amendments to the by-laws was brought before your Committee on Insurance and thoroughly discussed and it was unanimously decided to place it be-

During the coming two years we propose to devote our efforts to the printing and distribution of a small leaflet dealing with two points only—"the lump in the breast" and "irregular bleeding". We hope to distribute 100 thousand of these leaflets, and all physicians in the State will be asked to help us in this phase of public health work.

We have used the appropriation of last year, in part only, but we ask that the same amount as last year (twenty dollars) be allowed for the coming year

FRED E. CLOW,  
GEO. C. WILKINS,  
Committee

Manchester, N. H.  
May 14th, 1928

Referred to the Committee on Officers' Reports

The Secretary gave the report of the Committee on Automobile Liability Insurance as follows. The proposition of Lloyds, Inc., of Chicago, Ill., is enclosed in a statement sent me, and I would ask that it be referred to a Committee to make a report on. I understand it doesn't make a group insurance but only on the individual car and operates at an expense of 20 to 30 per cent cheaper than the ordinary automobile insurance by making physicians a preferred class.

Referred to the Committee on Officers' Reports

#### REPORT OF COMMITTEE ON MEDICAL EDUCATION AND DISTRIBUTION OF PHYSICIANS

Last year your committee presented a lengthy report to the House of Delegates. This same report was also read as a part of the subject matter presented for discussion at the June 1927 meeting of the New England Council of State Medical Societies. By vote of the House of Delegates the report appeared in full in several New Hampshire papers.

As a result of an all day discussion of this matter at the Council meeting a committee consisting of one member from each State Society, was empowered to bring in a report with recommendations. This report appeared in the *New England Medical Journal* and is too long to be included in this committee report. Apparently all important points were covered. The various known causes of the dearth of physicians in rural sections were mentioned and considerable stress was laid on the duty of a community to loyally support its physicians. Adequate income and reasonable hospital facilities are essentials if a community is to maintain a resident physician of high grade. Fees commensurate with the grade of service rendered and remuneration by the community for work in public health and preventive medicine are essential.

Several recommendations were made regarding the methods of teaching in medical schools in particular, that they should come earlier into close touch with patients that there should be a radical limitation of required research work less attention to changing technical details and better grounding in the fundamental details.

Of greater interest to this society was the following recommendation: "It is earnestly hoped that the Dartmouth Medical School be placed on a four year basis."

This recognition of the desires expressed by your committee one year ago is very satisfactory. Copies of these recommendations were sent to all medical schools in New England.

During the past year six physicians have settled in the smaller towns. As near as we can ascertain six towns have appropriated from \$600 to \$1000, as an inducement to a physician to settle in the town. Two of these offers have been accepted.

The following table gives the number of towns in each county without a resident physician

Rockingham	19
Strafford	6
Belknap	2
Carroll	8
Merrimack	13
Hillsborough	15
Cheshire	10
Sullivan	9
Grafton	20
Cooks	11

In this list there are five towns with populations ranging from 1050 to 1828, and there are seven towns with populations of from 800 to 1000.

In November 1927, the National Grange addressed a communication to the House of Delegates of the American Medical Association, calling attention to the growing scarcity of country physicians. In this communication they suggest that proper medical training can be given on the basis of a high school education and that such change in educational requirements would enable country boys to obtain the medical degree that is now denied them on account of the present increased cost of medical education. It will thus be noted that other organizations are cognizant of the situation, and are keenly anxious for a beneficial change.

Your committee again affirms its belief that Dartmouth Medical School should resume its four year course whenever in the judgment of its faculty and the trustees of the College, such change can be made without detriment to the present good standing of the medical school, and to the financial obligations of the College as a whole.

The need for the development of more adequate medical personnel in northern New England has become urgent. Dartmouth Medical School is at present a two year school, and has buildings, equipment and a faculty already in operation. Facilities for clinical instruction are constantly improving, the hospital being now rated at 125 beds and has been approved by the A. M. A. for internships.

Such constructive development is the natural forerunner of healthy expansion.

Your committee again urges communities desiring resident physicians to conduct negotiations, through the State Board of Registration and to be prepared to guarantee adequate compensation and moral support.

GEO. C. WILKINS, Chairman,  
LOUIS W. FLANDERS  
FRED E. CLOW,  
H. O. SMITH,  
CHARLES DUNCAN

Referred to the Committee on Officers' Reports

THE CHAIR. Next is amendments to the Constitution.

THE SECRETARY. Last year there were six amendments offered. Under the requirements of the last Section of the Constitution the House of Delegates may amend any article by a two-thirds vote of the delegates registered at that annual session. I move that the vote be taken after the reading of each amendment.

Motion seconded, carried

Dr Metcalf and Dr F P Lord spoke on matters of detail in regard to the subject

Dr D G Smith said that the Maine plan of insurance was brought before the Hillsborough County Society and discussed at length and that the Society voted approval of the plan and instructed their delegates to do all they could to have it adopted.

Dr Scribner presented a communication on Maternal Mortality Studies

#### MATERNAL MORTALITY STUDY

A maternal mortality survey of a cross section of the United States was requested by the State Directors of Maternity and Child Hygiene at their conference in Washington in 1926 This was following a paper on the study of maternal mortality read by Dr Robert DeNormandie at the Conference

The plan for such a study has been worked out by the Obstetrical Committee of the Childrens Bureau of which Dr Robert L DeNormandie is Chairman

The object of the study is to secure information on the deviations from generally accepted standards of obstetrical practice in the cases in which death occurred The data will be taken from the birth and death certificates filed in the State Bureau of Vital Statistics and further information obtained from the physician who attended the woman who died The interviewer is to be a competent and tactful physician. All information regarding patients will be considered as confidential

The New Hampshire State Board of Health is going to make this study, and we are asking New Hampshire Medical Society for their sponsorship coöperation and assistance This study will give us actual facts for the future guidance of the State Board of Health and Medical profession in this State It is an accepted fact that in this country we are losing too many mothers from causes incident to childbirth.

On behalf of the State Board of Health I am asking you to give our interviewer who will carry credentials from us every assistance The services of Dr Frances Rotherth, especially recommended for this work, have been secured

A copy of this report will be sent to every physician in New Hampshire The study has been and

is now being carried on in many of the States with the assistance and support of the State Medical Societies

Will you have sent to the members of your Society in this State a letter from your organization commending and approving this study and asking for their assistance in every way

Referred to the Committee on Memorials and Communications

THE SECRETARY I move that no information in regard to the meeting of this House of Delegates or of the meeting of the State Society in annual session be given to the press except through the authorized officers of the Society

Motion seconded, carried

DR HOLMES I move that the word "officers" in the previous motion be interpreted as meaning the Secretary-Treasurer of the Society

Motion seconded, and carried

Dr Holmes spoke of his being appointed New Hampshire correspondent and asked for more items, particularly deaths, hospital news and medical papers that are read Medical papers might be sent to a central distributing station

On motion, adjourned to 8 30 o'clock tomorrow morning

D E SULLIVAN,  
*Secretary-Treasurer*

#### CHANGES OF ADDRESS

Dr C A. Lamson Elkins New Hampshire to New London, New Hampshire

#### WITHDRAWN

Dr Edward G Marcotte, Somersworth moved to Connecticut.

#### DEATHS

Dr Charles H Quinn West Concord, died May 24, 1928



fore the House of Delegates We feel that it should be properly considered and, that these articles may be reviewed by another committee aside from the Insurance Committee, I make the motion that the Speaker appoint a Committee to bring in a report at the next meeting

Motion seconded, carried

A communication for the relief of indigent and incapacitated physicians was referred to the Committee on Memorials

DR T W LUCE

#### RECIPROCITY BETWEEN THE NEW ENGLAND STATES

I have interviewed the several members of our Board of Medical Registration and also a few of the leading medical men of our State concerning the matter of reciprocity, and uniform state board requirements in the New England group of States

A composite report of my findings is about as follows

1st There should be a uniform law requiring four years of study in a class A medical school, or its equivalent through three years under the "quarter system"—after at least two years of premedical college work.

2nd The candidate should be a graduate of record and present a diploma as evidence of this fact, from his medical school

3rd The very strongest evidence of good moral character should be required from every candidate

4th The examination should be practical and of such a character that no man who is in the upper half of his medical school class should find it difficult, and sufficiently free from technicalities to enable a physician in good professional standing from outside the State to pass it

With these simple fundamental requirements it should be possible to adopt uniform reciprocity arrangements between the New England States

The right of each State Board to reject any candidate no matter what his qualifications should be recognized as a principle

The detection of impostors should be relentlessly sought for and a central headquarters in New England should be established for this purpose—where an exchange of information concerning all applicants could easily be obtained

If each New England State will make a few minor changes in its laws these points can be covered and the entire matter simplified to the advantage of our profession in this section and the public which it serves

The matter was discussed by Drs Lord, Clow, Holmes, Luce, Scribner, Ladd and Weaver

Dr E M Fitch moved that the House of Delegates approve Dr Luce's report of the Committee on Reciprocity

Motion seconded and carried

The report was referred to the Committee on Memorials

DR E M FITCH It is the duty of the President of each component State Society to make a report back to the House of Delegates, and I would say that full doings of the New England Medical Council were published in the NEW ENGLAND JOURNAL OF MEDICINE

Dr D W Parker gave in detail a résumé of the meetings of the Council

DR FRANK DINSMOOR I was instructed by the Cheshire County Society to bring before the House of Delegates the action of the State Board of Registration in Medicine in licensing Dr William M Robb (Read correspondence held with the New Hampshire State Board of Registration in Medicine)

Dr J J Cobb said the matter was an ethical one and moved that it be referred to the Council Motion seconded

The Secretary stated that Dr Robb was not a member of the New Hampshire Medical Society

Dr Cobb withdrew his motion

Dr Weaver and Dr Holmes further discussed the case

Dr Frank Dinsmoor presented the following resolution *Resolved* That the House of Delegates of the New Hampshire Medical Society wish to express to the State Board of Registration in Medicine their emphatic disapproval of the licensing to practice medicine of Dr William M Robb and also to say that they believe their action was hasty and ill advised, and further to express the opinion that if Marlow needed a physician, it was entirely unnecessary to secure a man with a long criminal record, and further that the license of Dr William M Robb should be revoked

Motion to adopt the resolution made and seconded

Dr Sanders asked what action should be taken to render a repetition of such a case impossible—whether through the courts or the Legislature, as an amendment to the Board of Registration Act

The motion to adopt the resolution of Dr Dinsmoor was carried by a unanimous vote

Dr Homer H Marks presented the following resolution and moved its adoption

Resolution adopted at the annual meeting of the Coos County Medical Society held at Gorham N H, November 1927, and ordered presented to the House of Delegates at the meeting of the New Hampshire State Medical Society at its annual meeting May 1928

#### RESOLUTION

*Resolved*, That it is the wish of the Coos County Medical Society that the transactions of the State Society be published in the manner that has been followed previous to the year nineteen hundred and twenty seven (1927) and that a copy of this resolution be presented to the House of Delegates at its next regular session

Resolution offered by Dr William H Leith  
HOMER H MARKS Secretary

After remarks by Dr Cobb a motion to lay the matter on the table was made, seconded, and carried

Dr Fitch spoke further about insurance and asked to have Dr C R Metcalf of Concord, given the privilege of participating in the discussion No objection

The concluding paper was by Dr Charles Lund of Boston, Mass "Operations of the Aged" and discussed by Drs Emery Fitch, Claremont Arthur T Downing, Littleton. This paper was very helpful and instructive. Much was brought out in the discussion. It will be published later in the JOURNAL.

As a result of the business meeting the following officers were elected: President, Dr E M Miller, Woodsville, N H.

Vice-President, Dr D C Norton, Manchester, N H.

Sec-Treas, Dr John F Holmes, Manchester N H.

Executive committee: President and Secretary-Treasurer, Ex-Officio, Dr J F Gile Hanover N H, Dr Carlton R Metcalf, Concord, N H, Dr Timothy F Rock Nashua, N H.

The annual banquet took place in the evening and was one of the best in the history of the Club. Dr Thomas Luce of Portsmouth, Toastmaster presided in his characteristic and superlative manner presenting the following speakers: Dr E M Miller, President-elect, Mrs H A Harriman, President of the Belknap County Ladies Auxiliary, member of the State Board of Education, Senator Stanton Owen Esq, Laconia, Dr F N Rogers Manchester, Rev Otto D Durers of Laconia. Time and space will not permit a detailed description of the speeches. Suffice it to say that they were excellent and greatly appreciated by those present.

This meeting was one of the largest in the history of the New Hampshire Surgical Club and most enjoyable. Much credit is due Dr and Mrs C F Abbott of Laconia the Belknap County Medical Society and the Belknap County Ladies Auxiliary and the management of the Laconia Tavern for their untiring effort in offering exceptional hospitality.

JOHN F HOLMES, M.D.,  
Secretary-Treasurer

THE regular monthly meeting of the Manchester Medical Society was held at the Hillsborough General Hospital, Grasmere N H April 5 1928. The literary program consisted of the presentation of a paper entitled "What Is Wrong with the Medical Profession" by Dr Howard Streeter. This paper proved to be of unusual interest and created much valuable discussion. There seemed to be a prevailing opinion that more time should be spent by physicians in the consideration of the business side of the practice of medicine and an attempt made to understand and treat patients not alone for the scientific aspect but from the human aspect as well.

It may be said in passing that Dr Howard Streeter has proven a very popular and efficient health officer. Since coming to Manchester he has introduced many new and progressive projects into the health program of the city. In appreciation of his splendid work he was award-

ed the Kiwanis medal for the most distinguished service to the city during the past year.

## WHAT IS WRONG WITH THE MEDICAL PROFESSION?

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There is a trite saying "What is sauce for the goose is sauce for the gander." Who ever heard of an examination of the medical profession or whoever heard of an operation thereon? The medical profession is old very old, and has a most honorable and brilliant history, but like the old and honorable individual it may need a little alteration in its mode of living or functioning, but first a physical examination to determine its needs, if any should be made. Who is better qualified to make the examination, the flamboyant and every ready magazine critic, the social uplifter, the notoriety seeker, or the hard-headed studious physician himself? It must be admitted that the non professional examiner may be able to direct attention to apparent abnormalities but the physician himself must make the diagnosis and outline treatment if any be needed.

Criticisms of the medical profession and of physicians appear frequently in the press and magazines, papers recommending a different education for physicians are read far too frequently in conventions of professional workers, and slurring remarks are often heard in public places. There must be some reason for all this. Has the physician failed as a professional adviser or has he been so engrossed in his work and study that he has not taken cognizance of changed conditions in the world's progress or perchance has he actually acquired some characteristics or mannerisms not wholly in keeping with modern thought?

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cognizance of changed conditions" may offer slight clue to some of the antagonism directed toward the physician. The professional relationship of one physician toward another, the consultation, in fine the ethics of the profession are neither understood nor appreciated in toto by any individual other than a physician. Further, it is doubtful if a physician or medical organization has ever made any serious effort to acquaint the public with professionally recognized standards of conduct.

On the other hand does the physician ever place himself in the position of the anxious parent or relative or friend? The perspective differs as the position of the observer differs. It is to be noted that a sick physician or a physician whose near and dear relative is ill, differs in conduct very little if any from his non professional friend. The sick or distressed physician is prone to change medical advisers as quickly and as unceremoniously as any other person and also is just as ready to take his personal prescriptions as his lay patient may be ready to use red flannel or goose grease. It is difficult for one to understand why it is not his privilege to change physicians whenever he may so choose and without consulting a previous attendant. Medical ethics has prescribed or outlined the course to be pursued, but this course may be impossible and particularly so if the illness has been prolonged or the patient be the wage earner. Finances at hand may not be sufficient to pay in full, as per prescription, and consequently the patient may be obliged to employ one in whom he no longer has confidence or one who, as occasionally happens, has lost interest in his patient. The ethical method of changing physicians is without doubt the most favorable to the physician, but it is in all respects fair to the patient?

Recently there have been two controversies which have divided certain individuals into camps bitterly opposed, and some adherents of the one cause or the other were placed in a ridiculous light. Both these controversies harped back centuries, one related to evolution and the other dealt with church dogmas. In both instances the supporters of one contention based their adherence on fundamentals laid down centuries past which took no cognizance of changed conditions and modern thought. Is it not possible that physicians are clinging to an ancient code which is musty with age and should have implanted in it monkey glands or some other rejuvenating agent. Then, too, it is common knowledge among physicians that often he who supports most loudly in public places this ancient code, is the most flagrant offender in private and supports his sin with a shrug of the shoulders or some flippant remark.

All of us here present were not always as old as we are now—we were obliged somewhere in the more or less dim past to start in our chosen field of service. Who of us has not been re-

minded in a more or less direct mode by an older physician that we were young and would know more when we grew up? Is or was that ethics? Let us who are now old or becoming so rapidly remember our youthful experience and recall our resentment threat when we have occasion to greet a young physician and let us extend to him, not what was handed us, but rather a real glad hand and heart.

While speaking of ethics, how many are always guarded in their speech when brother practitioners are mentioned? The tongue is an unruly member and from time immemorial has caused trouble not only to its possessor but also to others who may have been beyond the range of its audible warblings. However much a physician may have wandered from what another physician may believe is the orthodox method, does not excuse criticism of the method even in a slight degree. One should remember that his methods may be open to criticism. Many a life long enmity has been created and many a good conscientious practitioner has been placed in a false light by a careless remark.

This is an age of open frank speech and every one frowns upon secret meetings characterizing them as fixing meetings or in some other odious terms.

The consultation, particularly the secret portion of it attended only by the physicians, is not always regarded favorably by the family or friends.

A short conference of the interested physicians before the consultation would appear to obviate the necessity of any star chamber session at the house. A tactful consultant can and should, with the attending physician assenting, give his opinion and recommendations openly to the family, withholding doubtful findings for conference at some place other than the patient's residence. Or he might in doubtful or obscure cases request another consultation within a few days. Such procedure might prevent unfavorable comments as to the value of consultations and might serve to rid people's minds of the idea that consultations are fixed and the consultant is sure to agree with the medical attendant.

The consultation question merges very readily into another phase of the medical art, a phase of importance both to physician and to patient. A plumber called to make repairs or alterations in a plumbing system is privileged to make mistakes and the bill both for the work and for the mistakes is readily paid—or another artisan may be called to correct the mistakes of the first one. One may criticize the workman and may grumble about the fee but no lawsuit or malpractice suit results. A lawyer may outline his arguments for the defence of his client and during the course of the trial may entirely alter his line of defence. Whatever may be the result, is there on file the report of a suit for malpractice against a lawyer because a client was not

awarded a certain financial verdict or because a client was convicted? What about the physician? Physicians are human and like all humans make errors in judgment but unlike other workers their mistakes may cost a life or injure the physical well-being of a patient. This fact should and does spur the physician to exercise great care but in spite of this care errors sometimes creep in. Is there no remedy? There must be, but like all remedies where the human element is involved the specific is not easily found. Is this not a problem for the medical society to solve? Cannot the society in some manner stimulate the careless member to exercise greater care? Have physicians any right to belittle an irregular when their confreres differ widely as to diagnosis and treatment when it would appear that the case is clear cut or when surgeons perform needless operations?

Years ago the physician dressed in a frock coat, wore a high hat, spoke a language all his own, and withal, was a most respected member of society. All that is changed except the language—the doctor wears a cap, an old coat knickers and is called Doc. What about the language? Let us ask the patient. Often far too often, people remark that it is useless to call a certain physician because he will not tell anything or if he does talk he speaks in non-understandable language. Certain medical terms are common parlance but others are deep mystery. Right here is found the answer to a question asked in the very beginning "Why do cults prosper?" Psychology is the stock in trade of all irregulars, without it they would soon fail. Granted that their mode of treatment is all wrong, that their explanations are false, that their education is limited and so on through the whole category of their disqualifications, nevertheless, the patient who possesses no knowledge of medicine or anatomy is impressed by the explanations given and is improved thereby in mind if not in body. Most human ills are self-limited and disappear spontaneously. If the mind can be satisfied during this stage the patient revives more readily and with greater satisfaction. If physicians would not scowl, would cultivate a happy facial expression rather than a professional blank would replace their solemn "ahs" and "I thought so" and "You called me just in time" and "Nothing is the matter with you" with an explanation that explains to the patient and with cheerful prospects for the future, the cults would soon be driven to desperation. This does not mean that desperate situations are not to be explained fully and truthfully to some member of the family, nor does it mean that the impossible is to be promised. Every physician can readily call to mind two types of students in the medical school—the studious one who gave every promise of a brilliant future, and the careless student whose future appeared anything but bright, a few years elapse and behold the tables are some-

times reversed—the lazy student, if he knows nothing else may know people and how to deal with them while the other wraps his professional mantle about himself and wonders at the perversity of people in general.

While discussing talks to the individual patient it might not be amiss to mention information for the general public. How often do physicians or medical societies give medical news to the press? Is it not a fact that the first information or first account of a medical discovery is distributed through channels other than legitimate medicine? If this is doubted consider the story of the X-ray popular information as to the proper care of tuberculosis, periodic physical examination, and so on. Is it not a fact that periodic physical examination propaganda or call it what you may was bitterly fought by medical societies until the pressure became so great that the professional society was actually driven onto the band wagon? Who is better qualified to give sound medical advice—the regular or irregular? Now enter Medical Ethics to give her moss-covered admonition "Thou shalt not advertise." Be it understood that medical information coming from one individual or signed by one is not advocated but necessary information can and should be given publicly by the society and it should be given to the daily press.

The last question "Has the physician acquired some characteristics or mannerisms not wholly in keeping with modern thought or has he lost something?" It appears that the physician has acquired and also lost but whether the acquisition or loss is in keeping with present standards accepted in other professions is a moot question. Years, yea centuries ago physicians gave of their time and substance freely, accepting in return whatever the recipient could or was willing to give. This arrangement was good neither for the physician nor for the patient. This plan diverted the physician's attention from the business side of his profession and gave the patient the impression that the physician was rich and consequently was not in need of lucre. If all this implication were true it tended only toward the highest Christian ideal which could not fail to appeal to all, but unfortunately for the ideal, as the years rolled on and the struggle for existence became more strenuous the physician found himself in need of that which sustains life and made charges for his services. This change from idealism to materialism has caused misunderstanding with each side accusing the other of bad faith. When or how this difference of opinion is to be overcome is not apparent but in the interest of peace and good-will to all the medical profession might make some overtures.

With this change in business methods has come another alteration which is a distinct loss to doctor and to patient, i. e., the passing of the family physician. Formerly the physician was the adviser and confessor of the family in all

matters, medical and non-medical, he was welcome at Christenings and weddings, had a standing invitation to partake at all meals, was prayed for and guarded as carefully as any member of the household, but now he delivers his goods and receives his money like a tradesman, he is sure of his family only when he is in their midst. This has robbed both the physician and the family of a pleasant friendship. Please do not misunderstand this statement. Physicians are family physicians in many instances and many pleasant lasting friendships have been formed and are forming but there is a strong tendency otherwise.

This may be due in no small measure to the passing of the old time general practitioner and the entrance of the specialist. Is not specialism over-specialized? Does not specialism deter the individual, who may have some slight ailment *and who wishes to pay for professional advice* but who has no extra cash, from consulting a physician when he knows that he may be shunted to some specialist who will demand a big fee? Is it not a fact that occasionally patients are referred when there is no actual justification for such procedure?

We all know that at the present time the medical profession does not occupy in the popular mind the high regard which formerly was accorded to it. We know that irregulars flourish without molestation by those placed in authority to enforce statutes governing the practice of medicine. We know that the doctor is pictured as a Shylock. We know that honorary degrees are seldom conferred by colleges on physicians. Why are physicians who in their daily walks and talks exemplify the teachings of the Nazarene not accorded some measure of acclaim which should be theirs?

If we are at fault, let us admit it and begin and pursue to the end an earnest and honest effort to clean house that once again we may occupy that station which by inheritance and by right of real service to our fellow man belongs to us.

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Following the literary program a lunch was served and the meeting concluded with an inspection tour of the hospital.

# Case Records of the Massachusetts General Hospital

ANTE MORTEM AND POST MORTEM RECORDS AS USED IN  
WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY R C CABOT, M.D

F M PAINTER, A.B. ASSISTANT EDITOR

CASE 14161

DYSPNEA WITHOUT OBVIOUS CAUSE

MEDICAL DEPARTMENT

A Canadian teamster fifty-two years old entered February 2 complaining of difficulty in breathing

A year before admission he began to have dull aching in the epigastrium, more or less constant but increased an hour or so after eating. During the year it had become slightly worse. At times it was associated with nausea. Induced vomiting relieved it. It was much less noticeable when he was busy and active. His meals had been extremely irregular as to time, quantity and quality. His appetite had been very poor. For ten months he had had a tendency to constipation. Nine months before admission after beginning farm work he developed a "dry throat" and what seemed like a cold. After several days the dyspnea was so severe that he could not work. After several days' rest it cleared up, but after a few days of work it recurred. For two months he alternated between work and rest, working in all not more than two weeks. He then gave up work entirely. The severity of the symptoms fluctuated markedly. For seven months he had intermittent dull aching in the right lower lumbar region worse on walking or stooping. In August the dyspnea became so severe that he entered a hospital.

A report from the hospital gives the following X-ray findings. August 17 both apices showed a few more lung markings than normal, rather more on the left. There was no evidence of calcification in these regions but in the first interspace and continuing downward from this point there were a few small calcifications, also in both hilus regions and for an inch or so below them, more in the left hilus. The diaphragm was normal. The costophrenic sulci were not deep but clear. The general lung fields were fairly clear, although on the left side external to and below the hilus there were a few small dense areas scattered over perhaps two square inches, suggesting some increase in the fibrous tissue of the lung and perhaps an exudate as well. Nothing suggesting consolidation, cavity or fluid was seen. The heart shadow was quite long and narrow. There was some evidence of

old fracture of the ninth rib in two places. The lower portion of the chest flared. There was some suggestion of emphysema in the lower lobes of the lungs. It was an emphysematous type of chest. A plate of the gall-bladder region showed nothing which suggested the presence of any dye.

After a week in bed in the hospital he was relieved, but on going home he had an exacerbation of symptoms and returned to the hospital a week later. About this time he vomited black material resembling coffee grounds. A gastrointestinal series September 12 showed moderate old pyloric stenosis without visible deformation. There were adhesions to the first portion of the duodenum. This was checked up after belladonna treatment. He remained four weeks in bed, was given pills and some injections, was discharged relieved and remained so for five weeks. He then began to get gradually worse again until he feared to die from lack of breath. After two more weeks in the hospital he was discharged very much relieved, although he felt tired and lacked energy. For three months and a half he had urinated four or five times a day and every half hour to two hours at night. He passed very little urine at night but found that if he did not void the dyspnea was much worse. He noticed the frequency particularly during the severe attacks of dyspnea. For the past few months he had required catharsis for every bowel movement. Seven weeks before admission he again had dyspnea and cough. For the past six weeks he had been treated and studied in the Out-Patient Department. Examination in the Genito-Urinary Department showed no disease. Eye examination showed questionable primary optic atrophy. X-ray in the Anaphylaxis Clinic showed thickened membrane in both antra suggesting chronic sinusitis. The diaphragm was normal in outline, slightly lower than usual, its motions limited. Fine detail in the lung was obscured by respiratory motion. The intercostal spaces were wide. There was generalized prominence of the hilus markings well out to the periphery of the lungs. The apices were essentially clear. (See illustration.) He had a little relief from potassium iodide and ephedrin, but continued to be extremely dyspneic and incapable of any exertion. He was given adrenalin. Beginning five weeks before admission he had very severe lancinating pain in the right lower lateral chest for three weeks worse on breathing. Three weeks before admission his condition became so bad that he could not come to the Out-Patient Department. He remained in bed for three weeks sitting up practically all the time, with severe paroxysms of coughing and dyspnea, worse at night, so that he was scarcely able to sleep except in the daytime. The day of admission he was able to go out for the first time. His weight had fallen from 165 pounds at the onset of the illness to 122

At fourteen, during the haying season, he had an attack of "asthma" with coryza and watery eyes lasting several weeks. The following year he went to sea and had no more asthmatic attacks until the present illness. He thought the attacks in the past ten months always seemed

hard all day and caroused most of the night until he was twenty-seven. Since prohibition he had used alcohol very rarely. Three years before admission he went to the Out-Patient Department with jaundice. The urine showed bile. The chest expansion at that time was good.



Taken seven weeks before admission to the wards. The diaphragm is normal in outline, slightly lower than usual. Fine detail in the lung is obscured by respiratory motion. The intercostal spaces are wide. There is generalized prominence of the hilus markings well out to the periphery of the lungs. The apices are essentially clear.

to be associated with a cold. He had not noticed coryza on contact with flowers.

His father and one brother died of tuberculosis. His mother had asthma in her later years.

At thirty-two he had malaria. At twenty-seven he fractured two lower right ribs. He had rare head colds. At twenty-seven he had gonorrhea. Since he was fourteen he had alternately sailed and worked ashore. On shore he worked

Clinical examination showed an undernourished, slightly cyanotic man lying propped up in bed breathing with difficulty and with audible expiratory wheeze. The skin on the forearms, chest and stomach showed fine flakes. Over the chest were small red papules, a few pustules. The nasal septum was deviated to the right. Teeth carious. Pyorrhea. Pharynx injected. Tonsils enlarged. Dorsal kyphosis and limitation of motion. Barrel shaped chest with poor

expansion Lungs full of wheezes and groans, chiefly expiratory Increased breath sounds in the right front from the fourth to the seventh rib A few moist crepitant râles at the left base behind Tactile fremitus and percussion note unimpaired Apex impulse of the heart not seen or felt Left border of dullness 8.5 centimeters to the left coinciding with the midclavicular line, right border 4 centimeters supracardiac dullness 6.5 centimeters, questionable enlargement to the left Rate regular Sounds of good quality obscured by wheezes No murmurs Arterial walls thickened and tortuous Tenderness in the epigastrium Good examination of the abdomen not done because of poor breathing Rectal examination showed fresh appearing bluish non-bleeding hemorrhoids Pupils equal, regular, contracted, reacted to light, dis- tance not observed Left knee-jerk not obtained (injury to left knee) Ankle jerks and biceps normal

Amount of urine not recorded, specific gravity 1.016, findings negative Blood 18,800 leukocytes, 82 per cent polymorphonuclears specimen too cyanotic to read hemoglobin, reds 5,316,000, smear normal Wassermann negative Sputum no tubercle bacilli, organisms not numerous Stool negative

Temperature not remarkable pulse 90 to 120 respirations 20 to 28

Orders Adrenalin chloride 1/1000, 8 minims s.c. p.r.n. for respiratory distress Luminal 1½ grains at bedtime Morphia 1/6 grain with atropin 1/100 grain s.c.

The day after admission râles were heard at the foot of the bed The lips were somewhat bluish The patient complained that he could not get enough air His respiratory movements were normal The therapy, chart and blood pressure are shown in the table That afternoon he died The heart stopped before the respiratory failure

Time	Temperature	Pulse	Respirations	Blood pressure	Therapy
1 p.m.	98.6°	110	20	120/80	Atropin gr 1/100
1.35	—	—	—	—	Atropin gr 1/100
3.45	—	90 ± 7	—	—	—
4.10	—	—	—	100/70	Venesection 350 c.c. No relief
4.20	—	—	—	90/64	—
4.25	—	—	—	80/38	—
4.30	—	—	—	—	Adrenalin minims 10
4.32	—	120	—	7/90	—
4.34	—	—	—	7/28	Improvement in respiration
4.35	—	—	—	—	Caffein gr iii intramuscularly
4.36	—	—	—	7/38	Adrenalin minims 10
				7/28	
				0 0	

## DISCUSSION

BY RICHARD C. CABOT, M.D.

## NOTES ON THE HISTORY

Presumably they had given a dye but did not recognize any in the gall-bladder through this technique

They checked up on the X-ray report after relaxing spasm with belladonna

I will try to sum up this long and complicated history before we come to the physical examination His most essential and important complaint seems to be *dyspnea*, but he also has very distinct *gastro intestinal symptoms* and suggestions of a *healed tuberculosis* in his lung also the possibility of *optic atrophy* which does not sound as if it had any connection with any of these other groups of symptoms

As to his gastro-intestinal symptoms the most definite point there is the X-ray, which seemed to show pyloric stenosis We are not accustomed to hear our pathologists talk about pyloric stenosis in the absence of any other lesion. If there is such a thing in adult life I do not know it There are probably some adhesions in the region between the pylorus and the gall-bladder It is possible that that was the cause of what was seen by the radiologist at that time He has no progressive complaints like those in cancer of the stomach and none that in any way suggest ulcer I do not believe that his stomach or his gastro-intestinal tract had anything to do with his present troubles It sounds more as if he had an old gall-bladder trouble with adhesions which possibly may have some relation to his dyspnea, because of the relation between gall-bladder disease and heart function which is certainly a very important though obscure connection

As to his lungs it doesn't sound as if he had tuberculosis in any active form It is very possible that he will show a healed process there There is a good deal in the examination to suggest emphysema We have the X-ray evidence of it, which is so far as I know, the only good evidence we have in relation to that disease That is the more tempting because we have not much else to explain his dyspnea It does not sound like cardiac dyspnea because of the absence of edema anywhere in the history and it does not seem to me as if any old tuberculosis that he may have can have been enough to give him this dyspnea I have no doubt there is an element of asthma, that is of spasm in it but I do not believe that is the whole thing

As to his supposed optic atrophy and as to his supposed urinary frequency I have nothing to say until we get evidence from further examination

The long narrow heart that is mentioned here is often seen in any disease that goes with a low diaphragm. That tends to this shape of the heart shadow I have seen it also a good many

times in tuberculosis when the diaphragm was not low so far as I know

#### NOTES ON THE PHYSICAL EXAMINATION

On the basis of these signs I can make out no lung disease unless it is emphysema. The region from the fourth to the seventh rib in the right front is not one where we are accustomed to see any particular disease that I can identify.

We do not expect to find the cardiac impulse of the heart in a chest of this shape. It is impossible to tell the size of the heart in a chest of this sort except by X-ray.

In the neurological examination we get no confirmation of the suggestion which that possible "optic atrophy" brought into our minds.

The Wassermann seems to me of some importance because there have been one or two points to suggest the possibility of syphilis.

In the table we see a blood pressure falling until finally it cannot be measured.

#### DIFFERENTIAL DIAGNOSIS

This is an unusual case so far as my experience goes. We do not often see people die here of asthma and emphysema, and it seems to me that the physical examination shows no reason to suppose that he died of heart trouble. Nothing is said about edema, and his heart so far as recorded is not a remarkable organ. There may be some hypertrophy, especially on the right side, but I do not believe that primary heart trouble was the cause of his death. It may have contributed. I still do not see anything better to say than asthma and emphysema as the main cause of his death. If we had more information about his urine we might say there was trouble with his kidneys. On the basis of what we have here we cannot say so. The X-ray shows a long, narrow heart, clear costophrenic sinuses, wide interspaces, and, I should say, the absence of anything pointing to active inflammatory or tuberculous trouble in the chest. So that I have no better diagnosis to make than emphysema and asthma, with probable cardiac hypertrophy especially on the right side secondary to that. Very likely there is some arteriosclerosis, but not any of importance, probably also evidence of old scarring or calcification in the lung from a previous tuberculosis. Adhesions in the region of the gall-bladder possibly involving the pylorus seem to me probable.

A PHYSICIAN: Do you think it is likely that he had a higher blood pressure before the last?

DR CABOT: That is quite possible, but he has been to other hospitals who have given us extensive reports but no record of blood pressure. I do not see that we can say anything about that. But I do not think he died of a failing heart, the result of a high blood pressure. If he had a high blood pressure I do not see that it did him any harm. To do any harm it has to

act on the heart, brain, or kidneys, and I do not see that it has acted on any one of the three. If he has had it I do not see that it has any bearing on this case.

A PHYSICIAN: Can you explain the high white count?

DR CABOT: I do not know how to explain it. We can say he probably had some terminal infection, but we have not a sign to tell us where.

A PHYSICIAN: Do people die of asthma?

DR CABOT: Yes. Dr Rackemann has recently reported some deaths from asthma. It is a rare but not at all an unknown cause of death.

#### CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Bronchial asthma

DR RICHARD C CABOT'S DIAGNOSIS

Emphysema of the lungs

Asthma

Slight hypertrophy and dilatation of the right heart

Arteriosclerosis

Healed tuberculosis of the lungs

Adhesions about the gall bladder?

#### ANATOMIC DIAGNOSES

Asthmatic bronchitis

Acute distention of the lungs

Emphysema

DR TRACY B MALLORY: This apparently was a genuine death from asthma. Our post-mortem examination was limited to the chest, but that was sufficient to show the lungs tremendously dilated, practically meeting in front over the heart, failing to collapse when the negative pressure in the thoracic cavity was broken, and even failing to collapse when considerable positive pressure was exerted on the lungs from outside. Section of the bronchial tree showed all the bronchi filled with very tenacious mucus with very little purulent element.

The heart was not enlarged, the right ventricle perhaps slightly hypertrophied, the left not at all. We did cut into the superior surface of the liver and found acute terminal congestion, but no evidence of any long standing chronic passive congestion, which also helps to rule out any heart disease. There was a very slight apical scar rather less than I should expect from the X-ray finding.

DR CABOT: On which side?

DR MALLORY: It was right.

MISS PAINTER: Were the coronaries normal?

DR MALLORY: They were negative.

DR CABOT: You did not examine the kidneys?

DR MALLORY: No.

DR CABOT: But you found enough to account for death?

DR MALLORY: I think it is almost impossible

that without a hypertrophied heart he could have died from his kidneys, without more definite evidence of an acute nephritis

### CASE 14162

## EPIGASTRIC PAIN, CONFLICTING SYMPTOMS, SUBSEQUENTLY ELUCIDATED

### MEDICAL DEPARTMENT

A married Canadian woman fifty-eight years old came to the Out-Patient Department November 4 complaining of pain and gas on the stomach of two months' duration, with a letter from her physician with a diagnosis of gastritis and neurasthenia

She dated the trouble from a hysterectomy for fibroids of the uterus thirteen years previously. After the operation she had one sharp attack of gas and pain in the epigastrium. After this she was in good health until three years before the visit. Then when mourning for the death of a sister she had noises in her head and was told that she had a high blood pressure. A year before the visit she began to have gas after eating certain things and tearing pain in the epigastrium relieved by belching. The pain occurred half an hour after meals and was somewhat relieved by eating a cracker or by baking soda. There was diffuse radiation of the pain, no definite sharp radiation to the right scapula. She once tried induced vomiting with relief. Russian oil gave much relief. Her bowels always moved one to three times daily without physic. Ten days before the visit she noticed jaundice and a little fever. Both of these had persisted. Her weight four years ago was 165 pounds, two years ago 145, the past summer 135 and at present 107.

She gave a history of urticaria, of shortness of breath for a year, growing progressively worse, palpitation for three months, appetite irregular. She had had occasional diarrhea for one or two days for a year. Her urine was occasionally dark.

Examination showed jaundice of the skin and sclerae. Tonsils large, boggy and follicular, with slight injection. Some pyorrhea and dental caries. Heart not enlarged. At the apex a moderately loud somewhat rough systolic murmur widely transmitted. First sound not entirely obliterated. Second sound clear. A systolic heard at the aortic area, probably the systolic from the apex transmitted, not heard at the pulmonic area. Aortic second sound rough. Occasional extrasystoles. Lungs normal. Spleen palpable at the costal edge, descending two fingerbreadths below the margin on inspiration. A small indefinite mass in the right upper quadrant near the midline. A median laparotomy scar in the lower abdomen.

Hemoglobin 80, red blood count 4,520,000, smear normal. Temperature and pulse normal.

The patient was given orders for sodium bromide, nux vomica and gentian compound and milk of magnesia. A gastro intestinal series with a Graham test was ordered.

November 9 X-ray examination with a barium meal showed no definite lesion. Peristalsis of the stomach was sluggish. The duodenal cap was irritable and emptied rapidly. Examination with a barium enema was negative. The gall-bladder was reported negative.

November 18 she reported feeling much better. The pain in the stomach was gone. She was referred to the Dental Clinic, where all her lower teeth and some upper teeth were extracted. December 2 her blood pressure was 214/100. After the extraction of the teeth her digestion was much better.

December 30 she reported for blood pressure. She had had another bad attack of indigestion beginning December 22 and lasting until the visit, with severe shooting pains in the stomach and burning in the back. She raised gas and was hungry all the time. One day she had marked jaundice followed by itching, also probably clay colored stools. Her blood pressure was found to be 176/104. Her weight was 98½ pounds.

She did not keep an appointment for January 5 and was not seen again at this Out-Patient Department.

### DISCUSSION

BY B. THURBER CUILD, M.D.

I feel that gastritis is a very poor diagnosis to make unless it is toxic, as in alcohol or iodine ingestion. Neurasthenia is a very difficult diagnosis to make and I prefer to leave it for others!

"She dated the trouble from a hysterectomy for fibroids of the uterus thirteen years previously." That statement conflicts somewhat with the fact that she came in complaining of disturbance of two months' duration. "She was in good health until three years before the visit" is another discrepancy. I get the impression from the history that she probably had disturbance of digestion for some period of time, and that these dates were fixed in her mind when the condition was more acute.

I saw this patient in the Out-Patient Department, and I remember that this pain was a very definite thing with her, also that it was definitely relieved by eating a small amount of food or by soda.

In considering the question whether this might be gall-bladder disease I do not think that we can feel as a point in favor that the Russian oil gave the relief that an animal fat might have given by emptying the gall-bladder. I do not think a mineral oil would act in that way. It might however have coated over an ulcer of the stomach and thus relieved.



The statement about bowel movements is rather against cholecystitis.

Ten days before the visit is, I believe, the first time that she had jaundice. We could get nothing further back than that.

The loss of weight, of course, turns our attention to the question of malignancy. It could have been explained by the diet she might have been following for peptic ulcer, but is not in line with the diagnosis of cholecystitis.

"Occasional diarrhea" makes us think of malignancy and possibly gall-bladder. Dark urine could mean bile. Pyrosis would be less favorable for a diagnosis of malignancy and more suggestive of ulcer.

I think in the face of later data we shall have to believe that "heart not enlarged" was an erroneous finding. The heart would have to be enlarged with that pressure. Probably the aortic sound was transmitted to the apex rather than an apical sound to the aortic region.

The mass could be any one of the three things we are considering.

She was put on a five-meal bland diet—the idea being that we were dealing with a duodenal ulcer. It might not be duodenal because of the early pain after eating.

We were still considering the possibility of malignancy and cholelithiasis with cholecystitis but ulcer symptoms seemed to predominate. I think the X-rays were reported as negative. Sluggish peristalsis seemed a peculiar finding in view of the fact that she had pain so soon after eating.

Patients frequently think they are jaundiced when they are not, but if they are presumably jaundiced and have itching it is a little more determined.

Whether the reaction in her blood pressure was due to having her teeth extracted or to the loss of weight I do not know.

We considered chronic pancreatitis but ruled it out, also possible malignancy of the pancreas secondary to a gall-bladder condition, but she had no fatty stools and no glycosuria.

By a fortunate coincidence a student who was working with me visited one of our large hospitals and in walking the wards accidentally found our patient. The visiting man spoke of the case, made his diagnosis, and told what had been done. He rather laughingly remarked that she had been to the Massachusetts General Hospital, where we had been treating her for gastric ulcer. She had had cholelithiasis, was operated on, and was very much better. When our student told him how classical the symptoms were for ulcer he was much more interested.

#### HOSPITAL REPORT

A report from this hospital is in brief as follows.

"January 3. This is an elderly, emaciated, jaundiced little woman who enters the hospital

because of recurrent attacks of epigastric pain of three years' duration.

"There is a history of many years of attacks of upper abdominal indigestion and discomfort which are consistent with gall stones and not inconsistent with an ulcer. There is a recent history of more severe acute attacks and of jaundice beginning about two months ago. She has been under observation for some time at the Massachusetts General Hospital and we understand that ulcer was tentatively diagnosed but that gastro-intestinal studies were made which failed to show it. They were about to pursue investigation of the gall-bladder further when the present acute attack caused her local physician to advise her immediate admission to this hospital.

"Local examination shows a palpable liver border, practically no tenderness over the gall bladder region and no gall-bladder to be felt. The spleen is distinctly enlarged, the edge coming just below the costal border on deep inspiration. Patient shows a marked icteric tint of the skin and sclerae. Bleeding and clotting time are normal. It seems beyond doubt that she has just recovered from a very severe attack of gall stone colic with the passage of a stone into the common duct. Whether it is still there or not cannot be told. In spite of the jaundice there is plenty of bile in the stools. No noteworthy elevation of leukocytes so that no cholangitis seems to be complicating the situation.

"Operative note, January 7. Cholecystectomy. Choledochostomy for chronic cholecystitis and cholelithiasis. Excision of small myoma of stomach. Hepatic cirrhosis."

"Roentgen study, January 30. The esophagus appeared normal. The stomach showed good position and tone, active peristalsis, a smooth outline and no six-hour residue. The duodenal cap showed a deep notch on the lateral or greater curvature border, but was not demonstrably fixed or tender. The ileum was normal. The cecum was tender but well filled and freely movable. Motility was good. Impression. Duodenal ulcer.

"Discharge note, February 19. The patient is discharged to day to return to the Gastro-Intestinal Clinic in three weeks, where her duodenal ulcer will be treated. In the meantime she has been instructed to take a five-meal Sippy diet with powders p.c. Inasmuch as it is causing her no symptoms at the present time, and also because of the fact that the ulcer appeared to be a chronic, perhaps 'healed' one when seen at the time of operation, it is very probable that the gall-bladder was the etiological agent in producing the patient's symptoms prior to the operation, inasmuch as the pain was typically gall-bladder in type.

"Diagnosis. Cholecystitis, chronic. Cholelithiasis. Fibromyomata of stomach wall. Hypertension. Duodenal ulcer."

# FURTHER DISCUSSION

My impression is that if she had jaundice the bleeding and clotting times would not be normal, but I am not sure about that. On the other hand if she were having brown stools at that time and no bile in the urine, her blood may have become normal though she still showed a jaundiced skin.

What treatment she had in the interim between the operation and her discharge I do not know, probably some form of Sippy diet.

I chose to report the case because I do not remember finding another case with both ulcer and gall-stones in the same patient but I am inclined to think that infrequently they may be present together. Some investigators talk about gastric ulcer being the result of infection, and if there is infection in the gall-bladder it may produce duodenitis. She certainly had classical signs of ulcer, also as classical as they can be of cholelithiasis, and according to the operation and later X-rays she had both conditions.

DR CABOT: Did they see anything of the ulcer at the time of operation?

DR GUILD: The report states that the ulcer appeared at the time of operation to be a "chronic, perhaps healed" one. The loss of weight seems to me excessive for that condition or the combined condition. Possibly we may have another diagnosis to make in the future.

DR CABOT: They found no ascites?

DR GUILD: None in the report.

DR CABOT: What can you tell us about this, Dr Holmes?

DR GEORGE W. HOLMES: As these notes read the Graham test showed no visible stone. Is there a possibility the dye was not given?

MISS PAINTER: They asked for a Graham test.

DR HOLMES: There may have been another examination. This is a plain film of the gall-bladder and fails to show any stone. Of course, if the patient had had the dye, it would mean that she had a diseased gall-bladder. If she had not had it, it would mean practically nothing. Was that appointment for a re-examination of the stomach or of the gall-bladder?

DR GUILD: They asked for a Graham test on the record.

DR HOLMES: Sluggish peristalsis or hyperperistalsis means very little unless we have other things to go with them. The same patient may show sluggish one hour and hyperperistalsis the next. The first time the patient is often frightened and the stomach does not move at all. She had had one X-ray examination when Dr S saw her, and had probably got over her fright. We did mention that the duodenum was

irritable. That of course means that they had difficulty in filling it and were not quite sure whether it was normal or not. What we usually do in these cases is to suggest that the examination be repeated. If we did not do it I should say we were open to some criticism for not doing so.

MISS PAINTER: She entered the other hospital, and did not come back here.

DR CABOT: There is a phrase in the other hospital record which I wanted you to interpret. "The duodenal cap showed a deep notch in the lateral or greater curvature border." What about that notch? What does that mean?

DR HOLMES: It probably means an incisura opposite the ulcer. Such a notch may be due to spasm from any cause. That alone would not be sufficient, I think, to make the diagnosis. But perhaps it means more than that to the man who uses that term. Some notches would be significant others would not.

A PHYSICIAN: The patient in that particular instance was having gall colic pains. Would that give a notch?

DR HOLMES: The duodenal bulb is apt to be deformed in gall-bladder disease and may be misleading. We are beginning to think that when we get a persistent deformity of the cap it usually means ulcer. This appearance of spasm and all those things are becoming of less and less value. We are studying the cap and finding ulcer earlier and smaller, and the number of cases in which the vomiting can be attributed to some other cause is getting less and less.

DR GUILD: I would like to know if in the necropsy findings you have found this combination?

DR TRACY B. MALLORY: I think we do not very often find marked degrees of the two together. A good many patients with gastric ulcer show mild chronic changes in the gall-bladder, just as almost every appendix shows remnants of infectious changes. We very seldom find a perfectly normal gall-bladder. From one point of view we could say that the gall-bladder is frequently diseased in patients with gastric ulcer, but I believe it is not to a serious degree.

DR CABOT: Is it any more diseased in peptic ulcer than it is in other conditions?

DR MALLORY: I think not.

DR CABOT: Just the "normal amount" of gall-bladder disease.

## DIAGNOSIS

Duodenal ulcer  
Chronic cholecystitis  
Cholelithiasis

# The New England Journal of Medicine

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## VACCINATION METHODS

THE choice of method for vaccinating against smallpox demands that several considerations be borne clearly in mind. The method chosen should give the highest possible percentage of "takes." It should reduce to a minimum any danger, discomfort or trouble to the person vaccinated, and it should be easily and quickly performed. The method described in a previous issue of this JOURNAL<sup>1</sup> meets all these requirements and, because of the complete satisfaction it gives, is quite generally replacing earlier methods. It is the procedure variously called the "Kinyoun" or "multiple pressure" or "parallel pressure" method and recent reports<sup>2</sup> indicate that in every respect it is the method to be preferred over all others. With the increasing practice of this highly satisfactory technique, it is most unfortunate that Toomey and

<sup>1</sup> White Benjamin. Vaccination against smallpox. *Bost. Med. and Surg. Jour.* Vol. 193, No. 5, pp. 210-212, July 30, 1925.

<sup>2</sup> Muldoon Mary T. False security from one vaccination.

*N. E. Jour. Med.* Vol. 198, No. 1, pp. 32-33, Feb. 23, 1928.

<sup>3</sup> Toomey John A. and Hauver Robert R. Intradermal vaccination. *Am. Jour. Dis. Child.* Vol. 35, pp. 186-197, Feb. 1928.

Hauver<sup>3</sup>, who are apparently unfamiliar with its advantages, should now recommend intradermal vaccination. They have recently reported that in their hands intradermal vaccination with diluted vaccine virus has the following advantages over other methods: there is less pain associated with this method, the large sloughing of the secondarily infected ulcer which frequently follows the scratching method is unusual in this type of vaccination, the method can be used in certain skin diseases in which scratch methods of vaccination might be contraindicated, that playing children do not need to have a bandage to keep the dirt and infection out, that it produces vaccinations in persons who have previously been unsuccessfully vaccinated, the skin may be cleaned by any chemical before vaccination without killing the virus, and finally it is the best method for large groups from a time saving standpoint. When compared to the antiquated methods of cross hatching, incision or multiple scarification these claims may be true, but when compared with the advantages of the Kinyoun, or multiple pressure method, none of them is true. Furthermore, intradermic vaccination as advocated by Toomey and Hauver has serious disadvantages. The vaccine virus must always be diluted, and it must be diluted shortly before use, because the living virus of vaccinia soon perishes in a diluted menstruum and can not be so supplied by manufacturers. Instances are known where the necessity of diluting the vaccine before intradermic vaccination was either unappreciated or neglected, and distressing results followed. The second disadvantage has to do with another danger of this method. If the injection is made too deep or if the intradermic area into which the vaccine virus is deposited is not strictly limited, not a benign "take" but infection may follow. Toomey and Hauver apparently are unaware of the superiority of the Kinyoun method and of some of the unfortunate results which have followed intradermic vaccination in perhaps less skillful hands than theirs.

With the exercise of great care in the dilution and injection of vaccine virus by the intradermic method it may produce satisfactory "takes" and immune reactions, but no more so than the Kinyoun method. It is doubtful if an intradermic injection causes less pain because the Kinyoun method is painless. The fact that it requires no dressing offers no advantage because the Kinyoun method requires no dressing and in fact produces less trauma than the intradermic injection. The Kinyoun method is quite as safe in the case of persons suffering from skin diseases, and, in fact, here it is the method of choice. It produces no ulcers and no sloughing and is as rapidly performed, if not more so, than the intradermic technique. A needle only is required for this method against a hypodermic syringe, a hypodermic needle, a sterile container for the vaccine and the time and ap

paratus required for diluting the vaccine in the case of intradermic vaccination

It is to be regretted that the advertising staff of the journal in which this article appeared was led to the writing of such an enthusiastic endorsement when announcing the February number and it is still more to be regretted that the *American Journal of Public Health* in its April issue gave the method such a laudatory review

We feel in duty bound to caution our readers against the use of the intradermic method of vaccination and if they are not already familiar with the Kinyoun or multiple pressure method they may to their advantage learn its details and employ the method in their practice. A detailed description of the method and of the various types of reactions following its use can be found in the issue of the *Boston Medical and Surgical Journal* for July 30 1925<sup>4</sup>

(EDITOR'S NOTE While it has never been the policy of this JOURNAL to recommend the usual publications issued by commercial firms we suggest that our readers obtain and read Bulletin No 1137 Smallpox and Vaccination recently printed and distributed by Johnson & Johnson of New Brunswick N J It contains an excellent description of approved vaccination technique a discussion of many questions concerning vaccination and an admirable colored plate depicting the varied reactions following vaccination.)

<sup>4</sup>Hooker Sanford B The skin test for immunity to small pox *Post Med and Surg Jour* Vol 193 No 5 pp 212-214 July 30 1925

## THE CARE OF CHRONIC ILLNESS

THE attention of Boston is now and again directed toward the problem of chronic illness, by an event such as is announced elsewhere in this issue, namely, the founding of the George F Baker Clinic for Chronic Disease at the Deaconess Hospitals

Inherently, the patient ill of disease which has persisted for months or years, presents to the physician a complicated problem in diagnosis complicated because of the existence of multiple and concurrent deviations from normal each of which must be diagnosed and properly evaluated before full success in treatment will be attained

Equally to the point, and equally inherently, the patient ill of disease which has persisted for months or years, is a less appealing visual and mental focus for the Samaritan who fails to think through to the conclusion of the problem presented than is the patient who should have died of acute disease, but lived

This is natural, for the acutely ill patient offers elements of a theatrical order which preempt the attention of the multitude. The man who should have died but was saved (in part) by the skillful treatment of physicians even if in the words of Ambrose Pare this patient was really healed by God, makes good news copy, stirs the blood, and draws gifts which build hospitals for the acutely ill

What has the chronic patient to offer? Nothing histrionic. Nothing much to the man in the street. Yet the chronic patient has much to

offer to the thinker who studies cause and effect, who looks toward and perhaps strives for a betterment of our conditions of living

The intelligent and persistent study of chronic disease offers a key if not one of the master-keys, to an understanding of and an alleviation of many major problems of modern clinical medicine and public health. Too often, it is upon a scaffold of chronic ill health, that acute disease displays itself, dealing sudden death to toilers gradually worn to the breaking point by recurrent mental and bodily ills

Beyond dispute, it is in large measure the half-cured patients who are being turned out of our acute hospitals every day of every year not by scores or hundreds, but by thousands who, swelling the rolls of those ill of chronic disease, swell also the mortality tables of those prematurely deceased. They swell the rolls too, of those others who, yet more unfortunate, live on to occupy almshouses and homes for incurables

A stupendous and age old mass fatalism seems to block progress in this direction, by an indifference whence issues not the active helping hand but passive neglect. Yet this neglect is not made complete effective, ending in early demise of the sufferer, as in more primitive civilizations. Balking at a death-dealing neglect, we somewhat console ourselves by keeping our sufferers alive, even though they may live on, or rather exist for decades as charges upon society

Eventually, however, the pocket nerve is heard from. With concentration of population expense of maintenance of the chronic patient becomes more obvious. Slowly the idea penetrates that it is illogical, if these patients are to be kept alive, not to make every effort to convert them from social liabilities into social assets

Prevention is the order of the day. In the case of the chronic patient, it indicates a requirement that the load on the camel be lightened. How? In part, by new or better care. In larger part, by decreasing at its source the flow of patients now being ejected half-cured from the doors of our acute hospitals. Too little thought is being applied to the problem of completing the recovery of each patient from the particular illness or illnesses which brought him to the acute hospital. Too often the disease only may be cured or alleviated. From the hospital point of view, this patient very properly should not continue to occupy an expensive acute bed, and the patient is promptly discharged from the hospital. But we lose perspective and forget that though the acute illness may be subdued, the patient is not yet recovered in health. Society has begun to think harder about giving the patient a chance for full recovery of his health, after this patient has successfully fought acute disease. Society should begin to think thus, for the patient only half-cured is not an efficient unit, socially or industrially

A century or so ago, Robertson deplored the high rate of chronic illness among the operatives

of Manchester, as contrasted with the minimal incidence of chronic disease among the native tribes of Africa. Before and since then, others have written upon this subject, but sporadically. Evidence accumulates however, that concerted effort is producing results. Thus, the Cleveland Hospital Survey (1920), gave full weight to the importance of the chronic problem in community welfare. In New York, Frankel (1905) drew attention to the almost absolute interdependence of the problems of chronic disease and convalescent care.

Here in Boston, the Robert Brigham Hospital (1914) is visible evidence that the chronic patient has not been wholly forgotten. The Boston Council of Social Agencies, under the guidance of Dr. Haven Emerson, has just completed a survey of chronic disease in Boston.

Every financial, practical, and humanitarian consideration converges to point the necessity for adequate attention to the problem of chronic disease, and today comes the announcement of the founding of the George F. Baker Clinic for Chronic Disease at the Deaconess Hospital, with a material mental and moral backing which assures the usefulness of its future operation.

The idea back of the George F. Baker Clinic for Chronic Disease is sound. Its opportunity is unlimited. It deserves and will receive the adequate support upon which will be based its success in helping to blaze the trail toward alleviation of the load of unnecessary chronic disease in this forward-looking community of Boston.

### THIS WEEK'S ISSUE

CONTAINS articles by the following named authors

SCAMMAN, CLARENCE L. A.B., M.D. Bowdoin, 1909-12. C.P.H. Harvard Technology, School of Public Health, 1922. Associate in Public Health Administration, Harvard School of Public Health, Director, Division of Communicable Diseases, Massachusetts Department of Public Health. Address: 546 State House, Boston. Associated with him is

WHITE, BENJAMIN. Ph.B., Ph.D. Yale, 1903. Director, Division of Biologic Laboratories, Department of Public Health, Commonwealth of Massachusetts, Assistant Professor of Bacteriology, Immunology and Preventive Medicine, Harvard School of Medicine and Harvard School of Public Health, Honorary Member Massachusetts Medical Society, Fellow, American Academy of Arts and Sciences. Address: 375 South Street, Jamaica Plain. Their subject is Active Immunization Against Diphtheria. Present Day Method and Recommendations. Page 839.

PAPAS, PRODOMOS N. A.B., M.D. Harvard, 1914. G.U. Surgeon, Boston Dispensary, Assistant Urologist, Massachusetts General Hospital, Consulting Urologist, Massachusetts Eye and Ear Infirmary, Teaching Assistant in G.U. Surgery at the Harvard and Tufts Medical Schools. His subject is The New Method of

Relieving Certain Prostatic Obstructions. Page 842. Address: 467 Commonwealth Ave., Boston.

STREETER, HOWARD A. M.D. Boston University, 1898. Health Officer, Manchester, N.H., Lecturer in "Public Health", Boston University Medical School, P.A. Surg. (R.) U.S. Public Health Service, Member of the Staff of the Hillsboro General Hospital, Grasmere, N.H., Formerly State District Health Officer Massachusetts, Department of Public Health, V.D. Control Officer, Massachusetts Department of Public Health. His subject is What is Wrong With the Medical Profession? Page 857. Address: Public Health Dept., Manchester, N.H.

### THE DOCTOR'S SADDLE BAG

#### HEALTH THROUGH ADVERTISING

THE health motif has taken the advertising world by storm. Whether it be safety razors, a new breakfast food or rubber heels, tooth brushes or dentifrices or a gargle for the garrulous throats of the multitudes, the banners of improved health are flaunted in the van, and the rustling of their silky folds obscures the music of the steady stream of cold cash that pours into the coffers of the advertisers. The California fruit growers of Los Angeles continue to rid the world of acidosis, aided by a stupendous advertising campaign in the lay, and, we fear, in the medical press. Fleischman's yeast (none other will do) continues to remove acne as if with sandpaper, and restores to health the racked and costive bodies of famous athletes, actresses and opera singers.

The list of renowned health propagandists is a long one, the Cuban sugar planters are about to convince a willing populace that sugar plays no part in obesity, and certainly none in diabetes. Twenty-two thousand one hundred and fifty-two witnesses say, in the case of The People vs. Caffeine, "My nervousness vanished when I changed to Postum!" 'Tis for your own good health—and the health of your family—you must buy a certain well known electric refrigerator. Only with one particular tooth brush can you gain gloriously white teeth and coral firm gums. To make this more effective, however, the danger line must be scrubbed with a special tooth paste, and the acme of health is achieved when you put new youth into your stride with the buoyant, lasting spring of rubber heels. Indeed it reads like poetry.

Enjoy shoe health, a St. Louis firm tells us, for whatever your avocation, good health is a vital asset, and the shoes you wear are a very important factor in keeping you physically fit. Cod liver oil raises the 80 per cent to 100 per cent health. The average man of 35, we are told by the American Barley Corporation, is beginning to slip physically—to lose that vital, physical force, that buoyant enthusiasm, which makes his ideas "go across." Cream of barley is a demulcent, it sends men to work to

What a lot of twaddle is being employed to ease the transfer of our money to someone else's pockets! Many of these products are good, giving value received for the money spent on them for we are not now dealing with quackeries pure and simple, there are enough of them as it is goodness knows. Many of these non-medicinal products which are advertised so largely on the health basis tread close to the "danger line" however, many of them step over it. Electrical refrigerators may be a health asset so is a good tooth brush. Dentifrices are useful and pleasant, but to imply more or less broadly that one dentifrice more than another will remove the danger line is near enough to quackery to warrant calling a spade first cousin to a shovel. We wax a trifle indignant for an occasional righteousness in indignation is good for the soul and serves as an intellectual massage to the suprarenal glands. Health is too valuable an asset to be used as a selling point for silent flush toilets or poornut chewing gums.

There is of course every reason why the manufacturer of this and the other thing should find it both satisfactory and profitable to exploit health. The human race on the whole under existing conditions of civilization enjoys poor health. The average man works either too much or too little or in an environment which is unsuited to the proper use of the human body. He eats foods which have been pulverized, desiccated and predigested, mangled, shredded, vitaminized, denatured, canned and otherwise outraged. He lives in crowds. He pounds city pavements. He eats too much, drinks too little (water), exercises infrequently and breathes again and again the overinspired if unexhilarating air of steam-heated apartments. He enjoys poor health perhaps more than he thinks he does but at best less than he might enjoy good health. He desires good health but he wants it brought to him through the advertising pages of the *Saturday Evening Post*; he doesn't want to go out after it with a handball or a tennis racquet. He is fair game for the health advertiser with his tooth paste, his chewing gum, his arch supporters and his tinctures of deodorized bunk.

At the lurid end of the health propagandist's spectrum is the vendor of out and out patent medicines and appliances and easy systems of cure for real or apparent disease. The object is to create in his victim the idea of disease and sell him something of no value whatsoever to cure it. We have progressed far enough in our journey towards the millennium so that at least he cannot fill his prey full of opium and cocaine. In the middle of the spectrum we have the respectable, if mercenary seller of sleep tight mattresses and gold plated plumbing fixtures who creates the idea either of disease or of better health and on that basis sells his customers something which may or may not be pretty good but certainly is not a panacea of universal value. California orange juice I believe to be

an excellent beverage and a nutritious drink in sickness. When the California fruit grower, on the other hand, tries to convince me that 65,000,000 people in the land of the free and the home of the brave are suffering from acidosis which can be cured by the prompt and copious administration of California orange juice, I think ill of him and prefer to order my oranges from Porto Rico. From an ethical business man he has become a quack, and in my indignation I secretly hope that he will become an addict to Marmola and that his family will fall ill of Castoria.

At the other end of the health rainbow—and remember that rainbows are elusive—lies what we who are engaged in the profession that deals with health and disease believe to be the true pot of gold, the health examinations, advice, as sound as we can make it, on hygiene and right living, early and correct diagnosis if possible, ethical treatment and the intelligent education of the public along the lines of health and disease. We may not be accomplishing, always the end towards which we are striving, for we are often the victims of personal bias or of lack of knowledge, and in our own ranks are those who do not fight the good fight. In the main, however, we are trying and we are accomplishing. Many diseases have been conquered and the span of life has been lengthened and thus without the aid of very many of those vendors of profitable products whose watch word is halitosis for Lister, though less well known has served humanity better than has Listerine.

## BOSTON MEDICAL LIBRARY

### INDUSTRIAL INSURANCE

THE creation of great concentrations of industrial workers through the operation of modern business tendencies brings with it many serious problems the solution of which should enlist the ablest thought we have. Many of these problems affect the medical profession. The chief complaint of the Doctors however is an economic one—a fear that their income will be cut down. If the profession is brought in to a discussion of these questions at conferences with the Insurance companies and the State Authorities it is usually for the purpose of seeing that the pecuniary interests of the profession are safeguarded and not to discuss the far more important questions which concern the handling of the general problem. Before the advent of these methods in industry most of these problems did not exist and yet new ones are being created every day. It seems only logical that Industry, which has created these difficulties, should bear the expense of carrying their burden.

Most large business enterprises are conducted to yield a substantial return to the stockholder and pay the worker a "living wage", i. e. a wage which will enable him to "carry on" in

accord with the living standards of the community in which he is located and the times in which he lives. To meet the competition that is inevitable and keen, the selection of the personnel of the wage earners is highly important and results in certain plants, in a large annual turnover in labor, imposing much expense upon the industry in the methods of selection. Sometimes in certain industries four or five men are employed for a period scarcely long enough to make them acquainted with their duties, 1 e up to the point when their labor would not be a liability to the concern, before they get one employee who stays long enough to become an asset. Hiring of men above fifty only unless they have worked for twelve or fifteen years in one situation and been released because the concern had gone out of business for some reason, sets free at fifty, every year, a goodly number of men who are certain to find it difficult to secure re-employment at any figure comparable to their abilities for a few years more at least, and adds this number to that ever increasing army of unemployed, who are so, because of the activities of efficiency engineers and labor saving devices. Recruits to this army come from agricultural fields as well as from those of commerce and industry.

Our professional contacts with the Insurance Companies and Accident Boards should be concerned not so much with whether we are to have our fees reduced or work taken out of our hands altogether as with the question whether the problem is being attacked in the best way or not. It is obviously of no use in the practice of medicine to attempt to cure a surface lesion by rubbing something on the skin over it when it is itself purely a manifestation of a constitutional defect. If we know enough not to be guilty of that sort of thing in our own practice where is the excuse for not going to the root of any matter upon which our services are solicited. Try as hard as we may to be fair and honest in giving testimony before the Industrial Adjustment Commissions we are handicapped because we are unfamiliar with much that we should know. Europe is far ahead of us in dealing with these problems. It behooves the physician, if he is to be of the service he might, to familiarize himself more fully with Industrial practices that he may the more intelligently cooperate in matters that are vital to the stability of the social fabric. A failure to do so advances us one step further toward State medicine and greater Bureaucratic control. The economic urge behind all industrial accident and sick benefit work is a factor which profoundly influences any treatment of the sick or injured. A certain amount of this would probably be removed if we had as a universal custom among the larger employers of labor where competition is keen, a rule which guaranteed to each employee twenty weeks employment in each half year, at least. Such a scheme has found favor in certain Euro-

pean plants. The literature on the workings of the Industrial Accident Boards and schemes for health and old age insurance is very extensive. The physician should be interested in it as he must be in any social problem and particularly so since there is an intimate relationship between the effects of any treatment he may see fit to prescribe and the results he may expect to attain.

The Library has a great deal of this literature on its shelves and that which gives a glimpse of the way these matters are being handled in Europe will be put out for the purpose of aiding those who are interested, during the week of June 11th.

## MISCELLANY

### PATIENTS IN MAINE STATE HOSPITALS FOR MENTAL DISEASE 1927

#### PRELIMINARY REPORT

The United States Department of Commerce makes the following announcement concerning results of the 1927 census of mental patients in the two State hospitals of Maine.

These figures are based on reports furnished by the institutions, through the cooperation of the State Board of Charities and Corrections. The figures for 1927 and 1928 are preliminary and subject to correction.

These hospitals had a total of 404 first admissions during the year 1927, as compared with 371 in 1926, and 339 in 1922.

These first admissions represent patients received during the year who had not previously been under treatment in any hospital for mental disease. Such newly admitted patients afford the best available measure of the number of new cases of mental disease which are brought under hospital treatment during a given year.

The increase in the number of first admissions to State hospitals in Maine between 1922 and 1927 was relatively greater than the growth in the State's population during the same period as shown by the fact that the first admissions in 1927 numbered 50.9 per 100,000 of population as compared with 47 in 1926, and 43.7 in 1922.

The extent to which provision has been made for State treatment of mental patients is indicated by the number of patients present in the State hospitals on a given date. In Maine the number of mental patients under treatment in the State hospitals has increased steadily from 1,258 on January 1, 1910, to 1,960 on January 1, 1928.

This increase was relatively greater than the increase in the population of the State from 1910 to 1928, since on January 1, 1928, there were under treatment 246.9 patients to 100,000 of the general population as compared with 169.5 patients per 100,000 on January 1, 1910. The number of patients under State hospital care, per 100,000 of the population showed an especially rapid increase during 1927 and also between 1910 and 1922.

Of the first admissions in Maine during the year 1927 232 were males and 172 were females and of the patients present on January 1, 1928, 992 were males, and 968 were females.

## MASSACHUSETTS LEGISLATIVE NOTE

House 1327 is an act to provide for the disposal of sewage of certain property of the Department of Mental Diseases in Waltham Lexington and Belmont and for the disposal of sewage of certain areas in Waltham Lexington and Watertown which may be combined therewith.

## RECENT DEATH

MERCER—DR. WILLIAM JAMES MERCER, a Fellow of the Massachusetts Medical Society died suddenly of heart disease at his home in Pittsfield May 27 1928 aged 56

Born in Pittsfield Dr Mercer was graduated from Holy Cross College in 1891 and from the Harvard Medical School in 1894 He had since then practiced in Pittsfield devoting himself largely to obstetrics He was on the staffs of St. Luke's and Hillcrest Hospitals and was on the school board for 15 years He was past ruler of the Elks charter member of the Eagles and past president of Pittsfield Veteran Fireman's Association

He was married in 1925 to Miss Grace Van Buren of Pittsfield a trained nurse who survives him as do two sisters Mrs Helen Clancy of Boston and Mrs Charlotte Van Reyburn of St. Louis and one brother the Rev Alexander Mercer of Brooklyn

## CORRESPONDENCE

### A CRITICISM OF AN EDITORIAL

Quebec, May 19th 1928

To the Managing Editor

THE NEW ENGLAND JOURNAL OF MEDICINE

Dear Sir

My attention has been drawn to your Editorial dated May, 1928 entitled The Wrong Serum referring to the flight of Col Lindbergh to Quebec P Q

Far be it for me to interfere with any matter that is distinctly an American one and further far less do I wish to try and influence the policy of your JOURNAL regarding Medical Ethics, or your attitude regarding Institutions distinctly American although world wide in activities

Nevertheless I feel confident that your Editorial was written without a full knowledge of facts and I am taking the liberty of sending you a statement made by me in reply to remarks similar to the Editorial in question uttered by responsible Canadian Government officials

I know nothing of the stage setting preliminary to the flight, but I feel confident that after reading this that your sense of fair play will admit, that the intentions of the American Institutions and people were amply justified by the circumstances of the case and I am bringing this to your notice as an honest endeavor to correct a misunderstanding and also as a small return to the American Medical Profession for their very many acts of kindness and courtesy of which I have been the recipient.

Sincerely yours

WM H DELANEY M.D., D.P.H. (McGill) F.A.C.P

## ARTICLES ACCEPTED BY THE AMERICAN MEDICAL ASSOCIATION

May 25 1928

### THE NEW ENGLAND JOURNAL OF MEDICINE

In addition to the articles enumerated in our letter of April 28th, the following have been accepted

H K. Mulford Co

Diphtheria Toxoid—Mulford

Parke Davis & Co

Glaseptic Ampoules Solution Glucose 50 per cent., 20 cc.

Glaseptic Ampoules Solution Glucose 50 per cent 50 cc

Stearodine Stearodine Tablets

Pasteur Institute of St. Louis

Antirabic Virus (Semple)

G D Searle & Co

Bismuth Sodium Tartrate—Searle

Ampoules Bismuth Sodium Tartrate—Searle 2 cc.

Swan Mvers Co

Biennial Sage Concentrated Pollen Extract—Swan Mvers

Pollen Extracts—Swan Mvers 2000 unit packages

### CHANGE OF AGENCY

Viking Palatable Cod Liver Oil formerly distributed by Sigurd E Roll Chicago is now distributed by Viking Health Products Chicago The Council has continued the acceptance of Viking Palatable Cod Liver Oil under the new distributor

W A. PUCKNER, Secretary

### A QUOTATION FROM DR. OLIVER WENDELL HOLMES ESSAY

Editor NEW ENGLAND JOURNAL OF MEDICINE

I am certainly much obliged to you for your editorial of the 17th inst in regard to the article in the March issue of the *Century Magazine*, describing in a half humorous way the work of hospital externs in their obstetrical work in the slums of New York City

It seems to me that a paragraph from Oliver Wendell Holmes famous essay on 'The Contagiousness of Puerperal Fever' is a most appropriate one in this connection—

The woman about to become a mother, or with her new born infant upon her bosom should be the object of trembling care and sympathy wherever she bears her tender burden, or stretches her aching limbs The very outcast of the streets has pity upon her sister in degradation when the seal of promised maternity is impressed upon her The remorseless vengeance of the law brought down upon its victim by a machinery as sure as destiny is arrested in its fall at a word which reveals her transient claim for mercy The solemn prayer of the liturgy singles out her sorrows from the multiplied trials of life to plead for her in the hour of peril God forbid that any member of the profession to which she trusts her life doubly precious at that eventful period should hazard it negligently, unadvisedly or selfishly

J F BALDWIN M.D

Columbus, Ohio

May 23 1928



accord with the living standards of the community in which he is located and the times in which he lives. To meet the competition that is inevitable and keen, the selection of the personnel of the wage earners is highly important and results in certain plants, in a large annual turnover in labor, imposing much expense upon the industry in the methods of selection. Sometimes in certain industries four or five men are employed for a period scarcely long enough to make them acquainted with their duties, i. e. up to the point when their labor would not be a liability to the concern, before they get one employee who stays long enough to become an asset. Hiring of men above fifty only unless they have worked for twelve or fifteen years in one situation and been released because the concern had gone out of business for some reason, sets free at fifty, every year, a goodly number of men who are certain to find it difficult to secure re-employment at any figure comparable to their abilities for a few years more at least, and adds this number to that ever increasing army of unemployed, who are so, because of the activities of efficiency engineers and labor saving devices. Recruits to this army come from agricultural fields as well as from those of commerce and industry.

Our professional contacts with the Insurance Companies and Accident Boards should be concerned not so much with whether we are to have our fees reduced or work taken out of our hands altogether as with the question whether the problem is being attacked in the best way or not. It is obviously of no use in the practice of medicine to attempt to cure a surface lesion by rubbing something on the skin over it when it is itself purely a manifestation of a constitutional defect. If we know enough not to be guilty of that sort of thing in our own practice where is the excuse for not going to the root of any matter upon which our services are solicited. Try as hard as we may to be fair and honest in giving testimony before the Industrial Adjustment Commissions we are handicapped because we are unfamiliar with much that we should know. Europe is far ahead of us in dealing with these problems. It behooves the physician, if he is to be of the service he might, to familiarize himself more fully with industrial practices that he may the more intelligently cooperate in matters that are vital to the stability of the social fabric. A failure to do so advances us one step further toward State medicine and greater Bureaucratic control. The economic urge behind all industrial accident and sick benefit work is a factor which profoundly influences any treatment of the sick or injured. A certain amount of this would probably be removed if we had as a universal custom among the larger employers of labor where competition is keen, a rule which guaranteed to each employee twenty weeks employment in each half year, at least. Such a scheme has found favor in certain Euro-

pean plants. The literature on the workings of the Industrial Accident Boards and schemes for health and old age insurance is very extensive. The physician should be interested in it as he must be in any social problem and particularly so since there is an intimate relationship between the effects of any treatment he may see fit to prescribe and the results he may expect to attain.

The Library has a great deal of this literature on its shelves and that which gives a glimpse of the way these matters are being handled in Europe will be put out for the purpose of aiding those who are interested, during the week of June 11th.

## MISCELLANY

### PATIENTS IN MAINE STATE HOSPITALS FOR MENTAL DISEASE 1927

#### PRELIMINARY REPORT

The United States Department of Commerce makes the following announcement concerning results of the 1927 census of mental patients in the two State hospitals of Maine.

These figures are based on reports furnished by the institutions, through the cooperation of the State Board of Charities and Corrections. The figures for 1927 and 1928 are preliminary and subject to correction.

These hospitals had a total of 404 first admissions during the year 1927, as compared with 371 in 1926, and 339 in 1922.

These first admissions represent patients received during the year, who had not previously been under treatment in any hospital for mental disease. Such newly admitted patients afford the best available measure of the number of new cases of mental disease which are brought under hospital treatment during a given year.

The increase in the number of first admissions to State hospitals in Maine between 1922 and 1927 was relatively greater than the growth in the State's population during the same period, as shown by the fact that the first admissions in 1927 numbered 50.9 per 100,000 of population as compared with 47 in 1926, and 43.7 in 1922.

The extent to which provision has been made for State treatment of mental patients is indicated by the number of patients present in the State hospitals on a given date. In Maine, the number of mental patients under treatment in the State hospitals has increased steadily from 1,258 on January 1, 1910, to 1,960 on January 1, 1928.

This increase was relatively greater than the increase in the population of the State from 1910 to 1928 since on January 1, 1928, there were under treatment 246.9 patients to 100,000 of the general population as compared with 169.5 patients per 100,000 on January 1, 1910. The number of patients under State hospital care, per 100,000 of the population, showed an especially rapid increase during 1927, and also between 1910 and 1922.

Of the first admissions in Maine during the year 1927, 232 were males and 172 were females and of the patients present on January 1, 1928, 992 were males and 968 were females.

# THE ANNUAL MEETING OF THE MASSACHUSETTS STATE NURSES ASSOCIATION

The Massachusetts State Nurses Association will hold its twenty fifth annual meeting on Tuesday afternoon at 2 30 June 16th, at the Huntington Hall 91 Boylston St Boston. The speaker of the afternoon will be Dr Clarence L. Scamman who will discuss 'How Does the Massachusetts State Department of Public Health Serve the Nurse as a Citizen?'

## MORNING SESSIONS

Private Duty Nurses Section 10 00 A. M. at Parish House Trinity Church Annual Business Meeting Papers on 'The Resident Nurse in Private Schools and Colleges'

Public Health Nurses Section 9 30 A. M. at Huntington Hall Annual Business Meeting Demonstrations of A Prenatal Home Visit and A Mothers Class by members of the staff of the Community Health Association

Massachusetts State League of Nursing Education at Parish House Trinity Church 10 00 A. M. Annual Business Meeting Speakers—Dr Wayland Farries Vaughan Instructor in Psychology Boston University Personality Types and Tests Paul E Johnson Instructor in Ethics Boston University 'What Should Ethics Teach?'

## AMERICAN ASSOCIATION FOR THE STUDY OF GOITER

The annual meeting of the American Association for the Study of Goiter will be held in Denver Colorado, June 18 19 and 20 1928 Headquarters Cosmopolitan Hotel, Scientific Sessions Medical Hall, 1620 Court Place

The programme follows

FIRST DAY—MONDAY, JUNE 18

### MORNING

8 00—Diagnostic Clinic Denver General Hospital 250 West Eighth Avenue at Cherokee Street Drs H S Plummer and S F Haines, Rochester Minnesota

10 00—Diagnostic Clinic Colorado General Hospital 4200 East Ninth Avenue Dr William D Haggard Nashville Tennessee

### AFTERNOON

Medical Hall, 1620 Court Place

1 20—Address of Welcome—Hon B F Stapleton Mayor of Denver 'The Keys to the City'

1 40—Address of Welcome—Dr James J Waring President, Medical Society of the City and County of Denver 'Medical Progress by Association'

2 00—Dr Robert Olesen Representing United States Public Health Service 'What Shall Be Done About Goiter Prophylaxis?'

2 20—Dr Ralph Richards Salt Lake City, Utah 'Utah Goiter Survey Including Examination of 110 000 Children'

2 40—Dr H D Kitchen Representing Manitoba Health Department 'Adolescent Goiter'

3 00—Major F P Robeson U S A. Fitzsimons Hospital Denver Colorado 'Trophisms of Endocrinological Imbalance'

3 20—Dr J H Hutton Chicago Illinois 'Relation of Goiter to Other Endocrine Glands'

3 40—Dr J C Moore Seattle Washington 'Endemic Goiter and Cretinism (With the Quervain Film)'

## Medical Society

### DISTURBANCE OF THE NERVOUS SYSTEM

part of a physician's service to concern himself with such troubles as to the clergyman for comfort and for the resolution of his too common unwillingness to regard seriously the emotional side seems to me to be due to the influence of two extreme views. On the one hand is the morphological pathology which so generally has it that the microscope the strappings of anatomy altered function has no distinct relation to the states of rage in the brain and with them? and dominance from unperceived perturbations what? If the surgeon-uthis is the medical

2 40—Dr F. H. H. Hyperthyroidism

3 00—Dr Henry F. L. Hyperthyroidism

3 20—Dr Arthur E. The Pathology of the Thyroid Gland

3 40—Dr W. M. Simpson, Jr. Endocrine Diseases of the Thyroid

4 00—Dr W. N. Gillette, Jr. The Pathology of the Thyroid

7 30—\*Banquet at the Denver Club,

THIRD DAY—WEDNESDAY JUNE 20

### MORNING

Medical Hall 1620 Court Place

8 00—Dr J. L. DeCoursey, DeCoursey Clinic, Cincinnati Ohio 'Toxic Psychosis and Goiter'

8 20—Dr Allen Graham Lakeside Hospital Cleveland, Ohio 'Dysthyroidism'

8 40—Dr J. K. McGregor, McGregor Medical Clinic, Hamilton, Ontario, Canada 'The Medical Treatment of the Thyroid'

9 00—Dr H. M. Clute Lahey Clinic, Boston 'The Unusual Pharmacology of the Thyroid'

9 20—Dr Arnold Jackson, Jackson Clinic, Wisconsin 'The Use of Iodine in the Treatment of the Thyroid'

9 40—Dr J. Tate Mason, Seattle 'Pre-operative Treatment of the Thyroid'

10 00—Dr Thomas J. Gallaher, Denver 'The Effects of Injudicious Use of Iodine as seen by the Otolaryngologist'

10 20—Dr C. F. Kemper Denver Colorado 'Injuries to the Parathyroids and Submaxillary Glands'

10 40—Dr B. T. King, Seattle Washington 'Analysis of 1,500 Goiter Histories and Clinical Notes'

11 00—Dr Nelson M. Percy Chicago Illinois 'How to Reduce the Mortality in Thyroid Surgery'

Everyone is urgently requested to obtain tickets early in addition to the report and speeches an uncensored movie film will be shown and a report of the Bern Conference on the Ladies invited

## NEWS ITEMS

**COST OF MEDICAL SERVICE TO EMPLOYEES OF THE BUREAU OF LABOR**—An inquiry made by the Bureau of Labor Statistics of the Department of Labor among its own employees shows that the average annual expenditure for such service is \$122.72 or 6.2 per cent of the average annual salary of \$1,992.63.

The following table gives the summarized statistical findings of the inquiry

	Average per employee	Per cent of sal ary	Average per capita
\$3,000 and over.....	\$190.63	5.5	\$86.65
Over \$2,000 and under \$3,000	146.13	6.3	69.59
Under \$2,000.....	98.92	6.2	54.96
Average	\$122.72	6.2	\$64.59

**DR BENEDICT HONORED**—The Vienna Society of Medicine, on March 23 elected as corresponding member Dr Francis G. Benedict, director of the Nutrition Laboratory of the Carnegie Institution of Washington, Boston—*Science*

**SENATE VOTES TO SET ASIDE MAY 1 AS CHILD HEALTH DAY**—A resolution (H. J. Res. 184) authorizing the President to set aside May 1 of every year as Child Health Day, was adopted by the Senate May 14.

**THE WORLD'S CHILDREN**—OKLAHOMA NOW IN THE BIRTH REGISTRATION AREA—The recent addition of Oklahoma to the birth registration area, which now includes 42 States and the District of Columbia, brings the total population within the area to 92 per cent of the estimated population of the United States.

**INTERNATIONAL STUDY OF INFANTILE PARALYSIS**—A gift of \$250,000 from Jeremiah Milbank for a three-year international study of infantile paralysis will be participated in by Chicago, Columbia, Harvard and New York Universities, the University of Brussels, the Lister Institute of London, the Metropolitan Life Insurance Company, and, it is hoped by the committee in charge by other institutions here and abroad. The head of the department in charge of the work in each institution is included in the membership of the committee—*Bulletin Children's Bureau*

## NOTICE

## ANNOUNCEMENT

Dr W. H. Watters announces the opening of his office at 124 Commonwealth Avenue Boston.

## REPORTS AND NOTICES OF MEETINGS

## THE CAPE COD HEALTH BUREAU ASSOCIATION

The Cape Cod Health Bureau Association held its annual meeting at Hyannis on May 23, the business session resulting in the re-election of the officers of last year: president, G. Webster Hallett; vice-presi-

dent, Edward Chase; and secretary-treasurer C. R. Bassett. It was voted to take part with other health agencies in an important health exhibit at the coming Barnstable county fair, with an appropriation from the association funds for the purpose.

President Hallett, health officer of Barnstable, spoke briefly on the history of the association, which began its health work some dozen years ago in various lines. It has been able to establish a professional county health administration, with Dr A. P. Goff for county health officer, and this has taken up the more serious lines of local health work.

Dr Goff reviewed the work of the county for the year. There has been no great number of serious communicable diseases reported in this time, no typhoid case has been reported for a couple of years, and a steady activity is in progress in immunizing school children against diphtheria. The office has had two lines of work for important ones, the elimination of the surface outhouse and the problem of the shellfish. The latter has been subject to revision of the regulations and the office has undertaken the work preliminary to issuing bed and shipping certificates. Another matter has been the problem of tuberculin testing.

In the absence of state commissioner of public health Dr. Bigelow, Mr. Edward Wright of the engineering division of the department spoke on the disposal of garbage and refuse. This was in effect a continuation of the subject much discussed a short time ago at the meeting of the southeastern Massachusetts health officers. The speaker noted five methods of garbage disposal, with a discussion of the merits of each one. These are dumping at sea, dumping on land, incineration, reduction and feeding to swine. The matter is very important since cities produce large quantities of putrescible garbage ranging from about 100 lbs. per day per capita to three times this amount, with an average of about 190 lbs. The cost is important and health protection demands proper methods.

The dump on land requires a "sanitary fill" with proper help and inspection. The method most in use in Massachusetts in general is feeding to swine. Twenty-five to thirty pigs are required to dispose of a ton of garbage and they eat only about half of what is given to them. Here come two problems, the maintenance of a sufficient number of pigs without becoming a public nuisance and the proper disposal of the refuse, which should be by burial. Rough calculations give cost ratios between the different methods as 26, 22 and 10 for incineration, reduction and feeding to swine respectively.

Discussion by half a dozen health officers each from his local point of view was closed by the statement by the president, that it is a far cry from the great city to the small village on Cape Cod, and the problem is practically a local one for each town, aided by the experiences of other communities.

The concluding major subject for the afternoon was the tuberculin testing of cattle on the Cape, the speaker being George T. McCarter, one of the Cape milk inspectors. Proposed increase in the remuneration for condemned cattle will make matters quiet until fall, but then it is hoped to have all cows on the Cape tuberculin tested with provisions that the unfit cattle shall not be replaced by infected ones which is now a not infrequent occurrence. Mr. McCarter appealed to the health officers of the Cape to so standardize their milk regulations as to eliminate milk from undesirable animals.

# The New England Journal of Medicine

VOLUME 198

JUNE 14, 1928

NUMBER 17

## The Massachusetts Medical Society

### THE MECHANISM OF EMOTIONAL DISTURBANCE OF BODILY FUNCTIONS\*

BY W. B. CANNON, M.D.†

IN 1896 when I was a first-year medical student Professor Henry P. Bowditch whose memory his former students delight to recall invited me to make use of the then newly discovered Roentgen rays in a study of the activities of the alimentary canal. In December of that year we demonstrated to the members of the American Physiological Society the passage down the esophagus of a swallowed mass made opaque to the rays by adding subnitrate of bismuth. After that beginning we studied the mechanical functions of the stomach and intestines and the various conditions affecting the rate of passage of food through the digestive tract. Almost from the start of these investigations an outstanding fact appeared. The smooth running recurrent waves of peristalsis coursing over the stomach and the rapidly shifting segmentation of the food masses in the small intestine were promptly abolished whenever the subject showed signs of anxiety, distress or rage. It was evident that these alimentary functions were extremely sensitive to emotional disturbances. My interest in effects of excitement, which was thus initiated led to studies of the services of the sympathetic nervous system by itself and in cooperation with glands of internal secretion and that in turn to an examination of the parts of the central nervous system which govern these fundamental reactions of the organism. You will pardon these references to personal experience. I trust for they account for the selection of the title of this discourse. Since you have asked a physiologist to address you you will permit him I feel sure to come and bring his contribution to medical thought and counsel. It has seemed to me therefore that we might profitably consider together the ways in which strong emotional states may endanger bodily welfare.

I think that we must admit that although physicians have not infrequent occasions to observe instances of functional disturbance due to emotional excitement, there is an inclination to minimize or to slight that influence, or even to

deny that it is part of a physician's service to his patient to concern himself with such troubles. Let the patient go to the clergyman for comfort and consolation and for the resolution of his deep anxieties. A too common unwillingness among physicians to regard seriously the emotional elements in disease seems to me to be due perhaps to the subtle influence of two extreme attitudes and disciplines. On the one hand is the powerful impress of morphological pathology. So triumphantly and so generally has it demonstrated under the microscope the structural alterations which accompany altered functions that any state which has no distinct "pathology" appears to be unreal or of minor significance. Fears, worries and states of rage and resentment leave no clear traces in the brain. What then have we physicians to do with them? On the other hand these mysterious and dominant feelings which surge up within us from unknown sources—are they not pure perturbations of the "psyche"? In that case what again have we physicians to do with them? If we show this indifference however is it surprising that men and women beset by emotional stresses turn from us and go for help to faith healers to Christian Scientists and to others who recognize the reality of these disturbing states?

An escape from the insistent demands of the pathologist for morphological evidence of disease and also from the vagueness and mysticism of the psychological healers can be found. I am convinced in an understanding of the physiological processes which accompany profound emotional experience. As a physiologist I have the reasonable right to consider what goes on in the nerve paths of the brain as not associated with any demonstrable structural change. Indeed very pronounced and disastrous consequences may result in the organism because of habit reactions which may be regarded as not different in quality from any of our ordinary ways of behaving. Also as a physiologist I have the reasonable right to regard suddenly altered functions of organs innervated from the central nervous system as occurring in consequence of nerve impulses discharged from that system.

The Annual Discourse delivered before the Massachusetts Medical Society at Worcester June 6, 1925.

\*For record and address of author see "This Week's Issue," June 9, 1928.

## AFTERNOON

- 1 00—Address—Professor Albert Kocher, Berne, Switzerland "Pre- and Post-operative Treatment of Goiter"
- 2 00—Drs Willard O and P K. Thompson, Massachusetts General Hospital Thyroid Clinic, Boston Massachusetts "The Significance of Low Metabolism Following Thyrotoxicosis"
- 2 20—Dr J DeJ Pemberton, Mayo Clinic, Rochester Minnesota "Indications for the Stage-operation in Diseases of the Thyroid"
- 2 40—Dr J Earl Else, Else Dudman Nelson Clinic, Portland, Oregon "The Treatment of the Desperate Goiter Patient"
- 3 00—Drs S F Haines and W M Boothby, Mayo Clinic, Rochester, Minnesota "The Value of Oxygen Treatment After Thyroidectomy"
- 4 00—Circle Motor Trip through the Denver Mountain Parks
- 6 00—Supper at the Denver Motor Club House, Bear Creek Canon, on return part of Motor Trip

## SOCIETY MEETINGS

- June 7—Boston Dispensary Complete notice appears on page 782 Issue of May 24
- June 16—Annual Meeting of the Massachusetts Nurses Association Complete notice appears on page 875
- June 18 20—Meeting of the American Association for the Study of Goiter See page 875 for complete notice
- June 18 22—Convention of the Catholic Hospital Association Complete notice appears on page 1597 Issue of February 16
- December 3 7—Radiological Society Convention Detailed notice appears on page 712 Issue of May 17

## BOOK REVIEWS

*Cardiac Arrhythmias Clinical Features and Mechanism of the Irregular Heart* By IRVING R. ROTH, M.D. Introduction by Emanuel Libman, M.D. Large 8vo (10½ by 7 inches), extra cloth 227 pages, 80 illustrations and five tables Paul B Hoeber, Inc Publishers New York, 1928

A new volume has appeared on Cardiac Arrhythmias by Irving R Roth. For a beginner in the study of cardiac arrhythmia this book should prove helpful. The diagrammatic method used is instructive, especially the figures explaining the mechanism of the so-called circus movement of auricular flutter and auricular fibrillation. However, the diagrams are not always accurate. For example it would not have particularly interfered with the diagrammatic method and would have been more exact to have the duration of systole varying considerably with heart rate as it actually does. The interval from the beginning of the QRS wave to the end of the T wave is very considerably shorter at fast rates than at slow rates. Along with this variation in the QT interval there would thus be a variation of the interval between the heart sounds which is what actually happens when one listens to the heart beating at varying rates. There is this difference in time interval between the heart sounds in one or two of the diagrams for example that of paroxysmal ventricular tachycardia but this same variation is not shown in a record just preceding illustrating paroxysmal auricular tachycardia at about the same heart rate. Then also in the case of the interpolated ventricular premature beat the chart should have shown a delay in the occurrence of the following ventricular con-

traction due to the delay in the PR interval which practically always occurs after an interpolated premature beat.

For the sake of completeness it would have been of interest to have had explained by figures and diagrams a few other conditions of abnormal cardiac mechanism which are of much importance although they are not to be included strictly with the arrhythmias. These are intraventricular block and alternation of the pulse.

The book is well made but perhaps a little elaborate and expensive for the particular purpose for which it has appeared. Some will doubtless question its need in view of the numerous works, both large and small already covering this subject.

*Physical Diagnosis*, by W D ROSE, M.D. C V Mosby Company 1927 Fifth Edition 819 pages

This book has developed into a treatise on physical diagnosis. The major portion of the book (632 pages) is devoted to the physical signs of the thoracic structures. The remainder of the systems is described within the compass of 267 pages. The text is well written and arranged. Owing to the choice of non glazed paper, the definition and detail of many illustrations are lost, but this is more than compensated for by the greater readability. Dr Luten has contributed a short, but excellent discussion of the cardiac arrhythmias.

There are certain points which have struck the reviewer's attention. Massive collapse of the lungs following surgical procedure is an entity worthy of consideration. Uncomplicated aortic regurgitation is more likely to show pallor than flushing. Figures such as the ones given for the location of cardiac impulse (apex beat) in the normal adult male are quite meaningless, thoracic diameters being so variable. It is very questionable whether at any time a systolic thrill is detected over the apex with mitral or tricuspid regurgitation. As a matter of fact, many of the signs described under mitral regurgitation are believed by many to indicate stenosis. On the other hand a presystolic murmur alone is not always indicative of mitral stenosis. The diastolic murmur of mitral stenosis is more characteristically mid-diastolic than early diastolic, that is its inception is not immediately after the second sound. Pericardial adhesions are more likely to increase the cardiac borders than diminish them.

The artificial distention of the stomach is a procedure but little utilized now. On the whole fractional analysis and X ray study offer more information regarding gastric capacity function, etc.

This edition shows a decided advance over previous editions and, with the greater detail, adequately covers the field of physical diagnosis.

## BOOKS RECEIVED FOR REVIEW

- The Healers*, by B Liber Published by the Rational Living 454 Pages
- Schizophrenia* Published by Paul B Hoeber, Inc. 491 Pages
- Hamburgische Universität Abhandlungen aus dem Gebiet der Auslandskunde* Published by Kommissionsverlag L Friederichsen & Co 643 Pages
- Filterable Viruses* by Rivers Published by The Williams & Wilkins Co 428 Pages
- Anthelmintics and Their Uses* by R. N Chopra and Asa C Chandler Published by the Williams & Wilkins Company 291 Pages

response reside? The answer to this question was obtained by Bard<sup>4</sup> who, after removing under either the cerebral cortex and various amounts of the brain-stem, studied the behavior of the preparation. He found that typical sham rage, accompanied by vigorous discharge of sympathetic impulses, occurs when both hemispheres, the corpora striata and the anterior half of the diencephalon have been completely isolated (1 e, the crosshatched parts in figure 1)

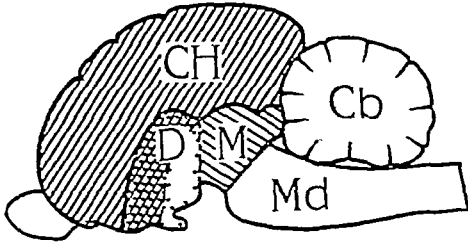


FIGURE 1 Median section of the brain. CH, cerebral hemispheres D diencephalon (indicated by dots) M mesencephalon Cb cerebellum Md medulla The crosshatching from right downward to left marks the portion of the brain which can be removed without interfering with the emotional expression of rage

The additional extirpation of the posterior half of the diencephalon promptly abolishes the spontaneous activity. Further tests proved that the center lies in a small brain mass in the ventral part of this region, 1 e, in the subthalamus.

Here is a fundamental fact which I wish to emphasize—that the nervous organization for the display of rage, both in bodily attitudes and in visceral changes is located in an ancient portion of the brain the optic thalamus which is a part of the diencephalon. This region is not like the cerebral cortex where new adjustments with the outer world are constantly being made or modified. Instead it is like the spinal cord a place where the simpler mechanism for orderly motions reside and where stimulation evokes fixed and uniform reflex responses. The typical postures and visceral changes which result from action of the thalamus are more complicated than the knee jerk or other spinal reflexes but they are not essentially different.

I have laid stress on the locus of the physiological mechanism for the reflex figure of rage because it may serve as a model for other primitive emotional responses. The expressions of fear, joy and grief are similar to it in character. In their essential features they are not learned (1 e they are inborn) and they are prompt, constant, uniform and permanently established patterns of reaction to appropriate stimuli. In other words they are like the simple reflexes and not like the complicated adjustments managed by the cortex. There is good evidence that the central control for the expression of these emotions like that for rage, lies in the thalamic region. For example, Bechterev<sup>5</sup> has reported that in an animal freshly deprived of its cerebral hemispheres petting may call forth signs of pleasure, e g, purring in the cat and tail wagging in the dog.

The evidence which I have adduced to show that the neural arrangement for emotional display is near the optic thalamus has been based wholly on experiments on lower animals. That evidence, however, is consistent with indications that in man also emotional expression is managed by parts of the brain below the cortex and specifically by centers in or near the optic thalamus. Thus when in human beings the cortical processes are abolished by anesthesia emotional display may be most remarkable. During the excitement stage of anesthesia, for example, the patient may sob as in grief or laugh as in joy, or make the energetic aggressive actions of rage. While the patient is struggling, shouting and muttering the surgeon may open the chest or perform other operations of equal gravity, a few minutes later, when conscious, the patient will testify that he has been wholly unaware of what has happened. It is when "laughing gas" or alcohol has set aside the cortical functions (1 e, has functionally decorticated the individual), that he laughs or weeps. In all these conditions the drug acts first as a depressant on the highly sensitive cells of the cortex and thus lessens or temporarily destroys their control of lower centers, then the lower centers, released from the dominance of the cortex as in surgical-

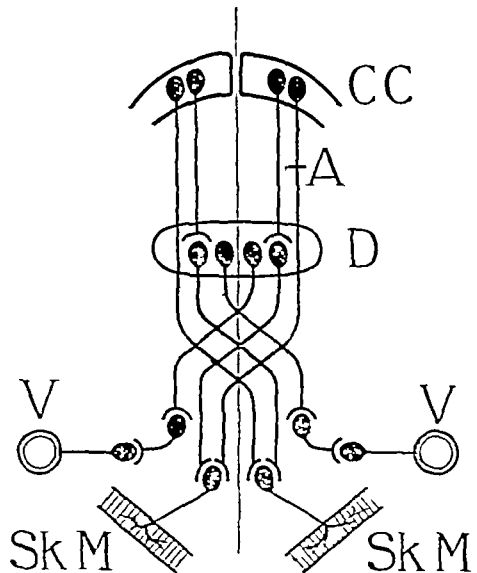


FIGURE 2 Diagram of possible relations of the nerve cells of the cerebral cortex (CC) to the viscera (V) and to skeletal muscles (Sk M). The cortico-thalamic fibre is regarded as inhibitory. Sensory fibres are not represented. Damage to the cortico-spinal tract at V interrupts cortical control of certain skeletal muscles on one side but it does not prevent control of these muscles on both sides by the centers in the diencephalon. Unilateral injury of centers in the diencephalon may leave bilateral control from the cortex.

ly decorticated animals show forth their functions in free play.

In harmony with the experimental evidence from lower animals and the just described pharmacological evidence from man is that derived from pathological studies of human cases. In certain forms of hemiplegia patients are in-

Using the physiological point of view, therefore, I propose to consider emotions in terms of nerve impulses, much as I might consider the nerve impulses from the "motor area" of the cerebral cortex as they govern the movements of skeletal muscles. Although I shall use words with psychological implications, such as "fear," "rage," "feelings," and others, let me state at the outset that I use them solely as convenient short terms for complex activities in the brain. I shall be discussing, throughout, the *physiological* aspects of emotional excitement—the nervous mechanisms which are operating.

First, what is an emotion? From the physiological point of view it is a typical reaction pattern. Let us consider rage as an example. In its extreme form the signs of rage include the crouching body, the moist or frowning brow, the firm lips, the clenched or grinding teeth, the growled threats or imprecations, and the tightened fists or the seized weapon ready for attack. This is a complex attitude which we do not have to learn—its occurrence is a part of our native inheritance. It occurs promptly when the stimulus is appropriate. It is a constant and uniform type of behavior, having features which are common in widely scattered races of men and even in lower animals, so that the nature of the attitude is at once understood without the necessity of words. It is a permanent mode of reaction, throughout an individual's life the characteristic display of the rage response may be suddenly evoked in all its elaborateness and, whether in childhood or old age, it differs only in minor details. Further, it is a response to a fairly definite stimulus—any hampering or checking of activity, or opposition to one or another primary impulse brings it out. Threaten the free motion of a dog or a man and the teeth will be uncovered. Again, the rage response may be interpreted as being useful. Elsewhere<sup>1</sup> I have called attention to the wide range of bodily adjustments which occur when one is enraged—the more rapid heart beat, the redistribution of the blood, the increase of red blood corpuscles in the circulation, the larger ventilation of the lungs, the dilatation of the bronchioles, the liberation of sugar from the liver, the secretion of adrenin with its favorable action on fatigued muscles—all of which may properly be regarded as rendering the organism more efficient in struggle, in such struggle as may be required to overwhelm the opposition and to allow the natural impulse to prevail. As we survey the characteristics of the outburst of rage as a typical emotion—the inborn, prompt, constant, uniform, permanent and useful nature of the response to a definite kind of stimulus—we note that these are the characteristics of a simple reflex, such as sneezing or coughing. They differ not in quality but in complexity.

Man is superior to the lower animals mainly because of the extensive development of the cerebral hemispheres. Comparative anatomy

shows that these structures have been superposed on a brain stem which differs relatively little in the higher vertebrates. And physiological investigation has proved that whereas the reactions which involve the cerebral cortex may be delayed, unpredictable, short-lived, and readily modifiable, those which involve the lower levels of the brain and spinal cord are prompt, uniform and stereotyped. Hence the difference between the complex behavior of the normal human being and the relatively simple behavior of the idiot. It is of interest, therefore, to learn where the nervous mechanisms lie which operate the various emotional displays. Do these mechanisms have their seat in the newly developed cerebral cortex or in the more ancient parts of the brain?

In the brain stem are centers which, in the lower vertebrates, lacking a cerebral cortex, carry on the primitive functions of maintaining existence, such as seizing their prey and escaping from their enemies. These are activities which in man are associated with attack or with flight from danger and are attended by the emotions of rage or fear. In higher forms the centers for these functions, though normally held in check by the dominant cortex, are capable of energetic response when conditions require urgent and insistent action. It seemed reasonable to expect that the centers in the brain-stem would manifest their typical activity if the cerebral cortex was removed. Removal of the cortex would destroy the possibility of sensation and, therefore, a depressing or disturbing anesthetic could be dispensed with. Accordingly Britton and I<sup>2</sup>, using cats as subjects, undertook an investigation of some of the immediate effects of a decortication which left intact almost all of the gray masses at the base of the brain. As soon as recovery from anesthesia was complete a remarkable group of activities appeared, such as are usually seen in an infuriated animal—a sort of sham rage. These quasi-emotional phenomena, which appeared to result from the restraint, included lashing of the tail, arching of the trunk, thrusting and jerking of the restrained limbs, display of the claws and clawing motions, snarling and attempts to bite. These were all actions due to skeletal muscles. Besides these, and more typical and more permanent, were effects on the viscera, produced by impulses discharged over the sympathetic nerve fibres. They included erection of the tail hairs, sweating of the toe pads, dilatation of the pupils, micturition, a high blood pressure, a very rapid heart beat, an abundant outpouring of adrenin, and an increase of blood sugar up to five times the normal concentration. This display of a "pseud affective" state or sham rage might continue for two or three hours.

As stated above, Britton and I left untouched almost all of the basal gray matter of the anterior brain stem. Where among these basal ganglia does the neurone pattern for the rage

zures' we may laugh weep or rage "uncontrollably", we feel as if "possessed" what we do in the stress of excitement is "surprising" or "shocking"—something "surges up within us" and our actions seem no longer our own. These common bywords are explicable in terms of a sudden and powerful dominance of the bodily forces by subcortical neurones i. e., neurones whose activity is not immediately attended by conscious states. Under favoring circumstances with only a momentary lifting of the normal inhibitory check these lower neurones capture the machinery of action and drive it violently into one or another of its variegated patterns.

I have now reviewed the evidence that the thalamic region when freed from cortical control is capable of elaborate independent activity of a stereotyped character, that when it acts it produces the typical reaction patterns in posture expression and visceral responses that characterize various strong emotions, and that the activity of the thalamus occasions the feelings of excitement or depression which we experience during an emotional disturbance. Now the question arises how are these considerations related to practical affairs? How do the processes going on deep down in the old part of the brain affect the workings of the body? To show how events in the thalamus can profoundly disarrange the nice adjustments of the normal organism I shall cite some illustrative cases. I am sure that they will not seem unusual or improbable to many of you.

First, with regard to digestive functions. As stated earlier, my interest in the effects of emotions in the organism began with observations on the abolition of gastric peristalsis during excitement. Elsewhere<sup>9</sup> I have described instances of total stoppage not only of the mechanical action of the canal but also of the work of the digestive glands in consequence of emotional stresses. An evening's meal may remain undigested all night in the stomach if there is persistent worry during the period. The saliva the gastric and the pancreatic juices all may be stopped by fear. The whole digestive process, which is subject to check by the sympathetic system may be profoundly disarranged by anxiety and distress—the minor aspects of fear. McLester<sup>10</sup> has estimated that one-third of the patients with disorders of the alimentary tract are suffering because of lack of emotional balance. Alvarez<sup>11</sup> cites a case of persistent vomiting which started when an income tax collector threatened punishment if a discrepancy in the tax statement was not explained and which ceased as soon as Alvarez himself went to the collector as a therapeutic measure and straightened out the difficulty. The natural processes of the alimentary canal are fundamental to all other functions of the body. Any disturbance of normal peristalsis, segmentation and secretion of the digestive fluids may have widespread ill effects in the organism. Cabot<sup>12</sup> has recorded

an instance of fracture of the leg which failed to unite. Investigation showed that the patient was fearful lest his family was suffering while he was absent at the hospital i. e. the anxiety resulted in loss of desire for food (absence of hunger contractions of the stomach), that resulted in impaired nutrition and that in turn led to such impairment of the reparative processes that the bone fragments were not welded together. Assurance that his family was well and happy and being cared for quickly altered the patient's condition. He ceased worrying thereupon began to eat heartily and gain in nutrition and then his broken bones began to knit.

The cardiovascular system like the digestive system is under the influence of the sympathetic nerves but instead of being depressed or inhibited it is stimulated by them. The excitement which stops gastric digestion makes the heart beat more rapidly and raises blood pressure by contracting the blood vessels. During the War there appeared not infrequently cases of "disorderly action of the heart" or as it was sometimes called "soldier's heart". The slightest excitement or perturbation would send the pulse bounding at a high rate (130 to 150 beats per minute). The general physical and nervous condition of the victims of this disturbance—their anxious faces their troubled eyes the drawn lines about the mouth their trembling—was such as to make reasonable the view that the stresses of the war had become intolerable and had resulted in such sensitizing of the sympathetic control of the heart that even mild stimulation produced extreme effects.<sup>13</sup> The mechanism by which emotion may bring about such sensitizing is illustrated in a case reported by Foster<sup>14</sup>—

A wife who was free from any cardiac disorder saw her husband walking arm in arm with a strange woman and acting in such a way as to rouse jealousy and suspicion. Profoundly stirred by the incident the wife hastened home and remained there several days. She then began to fear going out lest she might meet her husband with her rival. After days of wretchedness she was persuaded by a friend to venture forth 'probably in a state of abject terror' as Foster remarks but she had not gone far when she ran back to her home. Then she noted that her heart was thumping hard that she had a sense of oppression in her chest and a choking sensation. Later attempts to go outdoors produced the same alarming symptoms. She began to feel that she might die on the street if she went out. There was no organic disease of the heart, and yet slight effort as she moved from her home brought on acute distress.

The influence of excitement on arterial blood pressure may also be noted. The pressure is produced by the energy of the inflow of blood into the arteries and the resistance to the outflow from them. The sympathetic impulses by speeding the heart rate and constricting the arterioles raise the pressure by affecting positively both factors. Gallavardin and Haour<sup>15</sup>



capable of moving the face on the paralyzed side, but if an emotional (i. e., a sorrowful or joyous) situation develops, the muscles which were unresponsive to voluntary (i. e., cortical) control flash into action and give *both* sides of the face the expression of sadness or gaiety.<sup>6</sup> These are cases of subcortical interruption of the motor tract (e. g., at A figure 2), and presence of an intact optic thalamus. The converse of this condition is seen in unilateral injury of the thalamic neurones (figure 2), then the patient moves symmetrically both sides of the face at will, but when he laughs or weeps the emotional expression is unilateral. Cases of pseudo-bulbar palsy also bring interesting testimony. In this disease there is usually a bilateral facial paralysis, with one side somewhat more involved than the other. Voluntary pursing of the lips as in whistling, or wrinkling of the forehead, or making a grimace, may be impossible. And yet the apparently paralyzed muscles function quite normally in laughing or crying, scowling or frowning. Indeed patients may have prolonged and uncontrollable fits of laughing or weeping. According to Brissaud<sup>7</sup> the pathological condition in this disease is a lesion of a part of the cortico-thalamic tract which frees a portion of the thalamus from the cortical check. All these observations, experimental and clinical, consistently point to the optic thalamus as the region in which resides the neural organization for the different emotional expressions.

The thalamic region is not only the seat of the neural patterns for the various emotional displays. It appears to be also the source of the peculiar feelings which contribute glow and color to otherwise drab sensations. The evidence for this inference is mainly clinical. Head<sup>8</sup> has cited numerous cases of unilateral lesions in the thalamic region in which stimuli which evoke feelings have an excessive effect—pin pricks, painful pressure, pronounced heat or cold all produce much more distress on the damaged side than on the normal side of the body. Agreeable stimuli likewise are felt keenly on the damaged side, a warm test tube for example, may give rise to intense pleasure attended by signs of enjoyment on the face and by exclamations of delight. Again, the playing of music and the singing of hymns may arouse such increased emotional feeling which is referred by the patient to the damaged side, that they may be intolerable. Imagined or remembered situations associated with past emotional experiences have an influence on the damaged side similar to the disturbing stimuli from the sense organs. This excessive influence of affective stimuli, whether from the body surface or from the cortex, Head attributed to the release of the thalamus from cortical control. When freed from check it overacts. And since in these cases the feelings are magnified on the damaged side, Head has concluded that the thalamus is occupied with the emotional aspect of sensation and that the uni-

lateral overaction there is the cause of the unilateral magnification of feeling.

We have reviewed the evidence that the neurones of the thalamic region discharge outward and downward to muscles and viscera to produce the typical bodily changes of emotional excitement, and that they discharge upward to the cortex to add richness and warmth to the simple sensations. Two other important points I wish now to emphasize.

The first of these is concerned with the relations of the cortical and the thalamic control of bodily processes. It is clear that *skeletal muscles are governed at both levels, cortical and thalamic* (see figure 2), for example, we may laugh spontaneously because of a ludicrous situation (thalamic laughter) or we may laugh as a voluntary act (cortical laughter). It is quite as clear that the *viscera*, on the other hand, are *only under thalamic government*, we cannot by direct act of will increase the blood sugar, accelerate the heart, or stop digestion. When there is double control the cortical neurones, to be sure, are ordinarily dominant and may not release the excited neurones of the thalamus (though we sometimes cry or laugh "in spite of ourselves"). Then there is conflict between the higher and lower controls of the bodily functions—there are opposing influences with accompanying confusion. The cortex, however, can check only those bodily functions which are normally under voluntary control. That point I would emphasize. Just as the cortex cannot cause, so likewise it cannot prevent those stormy processes of the thalamus that increase the blood sugar, accelerate the heart, stop digestion, or produce the other disturbances characteristic of great excitement. When an emotion is repressed, therefore, it is repressed only in its external manifestations. There is evidence, to be sure, that when the external manifestations are maximal, the internal turmoil is also maximal, and it is probable that cortical control of the outward display of excitement results in less internal disturbance than would accompany free expression. Nevertheless in a conflict between the cortical government and the activities of the thalamic centers the ungovernable internal manifestations might be intense.

The second point is related to evidence that states of consciousness are associated only with the cortical neurones. Certainly we are unaware of the numerous and complicated reflexes which determine bodily posture or the size of the pupil, for example, although these reflexes are regulated in the brain stem. It follows that the neural mechanisms for the primitive emotions, active in the basal ganglia, are likewise probably not directly associated with consciousness. This consideration explains, I conceive, some of the most characteristic features of emotional experience. The disturbance in extra-conscious parts boils up into the realm of the conscious. Therefore, we have emotional "semi-conscious." Therefore, we have emotional "con-

reaction of fear Limitation or hampering of the freedom of bodily movement is from the beginning the natural stimulus for rage

Agents other than the natural stimuli, however, can easily be made to set a reflex in action if only they are closely associated with the natural stimuli Thus if a red light is flashed repeatedly at the same time that food is placed in the mouth the red light will itself alone become as effective as the food in causing a salivary discharge The indifferent stimulus the red light is then called the conditioned stimulus and the reflex salivary secretion, under the circumstances, a conditioned reflex All sorts of ordinarily indifferent external agents—not only a light, but a sound, a shape, a contact an odor, indeed *anything* that will influence a sense organ—may be made into an effective stimulus by close association in time with the normally effective stimulus Thus objects and events in the world about us are constantly acquiring new significance for our reactions All the processes of conditioning are carried on in the cerebral cortex These facts, which have been studied in great detail and most instructively by the Russian physiologist, Pavlov<sup>27</sup> have pertinence for the explanation of emotional behavior

Our emotional reflexes like the salivary reflex become complicated by the conditioning of indifferent stimuli A white rat shown to a baby causes the baby to reach for it and to play with it, there is no fear Then the rat is presented repeatedly but at the same time a loud sound is made by striking a steel bar The rat thus becomes a conditioned stimulus for the fear reaction produced by the loud sound and thereafter when the rat is shown, the baby cries and turns away He is now afraid of the rat not because it is a rat but because it has become the signal and symbol of something fearful—the loud sound In such ways as this the indifferent circumstances of an emotional disturbance become conditioned stimuli or signals for renewal of the disturbance The wife who saw her husband paying attention to a strange woman on the street had an intense emotional experience which was renewed not by seeing again the errant husband and his distressing companion, but by going into the street! Thus by extended associations emotional responses become subjected to more and more involved conditioned stimuli until great complexity and intricacy of affective behavior result

In the foregoing discussion I have purposely emphasized the physiological mechanisms of emotional disturbances, and for two main reasons First, I wished to show that these remarkable perturbations could be described in terms of neurone processes And again I wished to persuade you that these interesting phenomena should not be set aside as mystical events occurring in the realm of the “psyche,”

but rather should be regarded as movements and inhibitions and disturbances in the body which properly fall within the province of the physician

Probably a physiologist is venturing too far if he attempts to suggest practical modes of treatment And yet in what I have presented to you there are physiological implications which have practical bearings on the care of patients who have been or are being profoundly disturbed by emotional experience

First, there is the importance of early treatment We are all acquainted with the readiness with which habits are established in the nervous system by frequently repeating an act Every time the nerve impulses traverse a given course they make easier the passage of later impulses Thus habitual emotional expressions, both in the facies and in the viscera, may become fixed and deep-set in the neural organization just as the complicated adjustments of swimming skating or bicycle riding become wrought during our later years by repeated practice It is clear that so far as possible emotional habit-reactions should be prevented by prompt treatment

As we have seen the cortex has no direct control over the functions of the viscera It is useless therefore to try to check a racing heart or to lower a high blood pressure or to renew the activities of an inhibited digestive system by a coldly reasoned demand for different behavior The man whose broken bone failed to knit because he was fearful about his family's welfare could not be *argued* out of his fear, the fear left him when he learned that his family was actually comfortable The cortex which is concerned with analysis of the outer world should not, therefore be the sole means by which treatment is attempted, the *occasion* for worries anxieties, conflicts, hatreds, resentments, and other forms of fear and anger, which affect the thalamic centers, must be removed In short the factors in the whole situation which are the source of strong feeling must be discovered and either explained away or eliminated

Although the cortex has no direct control over the viscera it has indirect control—we can walk into danger and have a thrill though we cannot have a thrill by merely resolving to have one Similarly we can often avoid the circumstances which rouse fear or rage or disgust and their attendant visceral turmoil—we need not go near the agitating spot

Again, when the reason for the perturbation is not clear it can sometimes be found by careful enquiry or analysis It is an interesting fact that a full explanation of the way in which the trouble has been caused will not infrequently suffice to remove the trouble, promptly and completely

Finally a word of warning may not be out of place If an objective cause for a patient's

have reported after a study of 100 cases that the first time the blood pressure is taken, and the subjects are, therefore, excited, the systolic level may be 25 to 35 millimeters higher than it is later. And Schrumppf<sup>16</sup> relates an instance in which fear of a serious diagnosis raised the pressure 33 per cent, with prompt return to normal when reassurance was given. In extreme cases of pleasure, anger or fright a rise of 90 millimeters of mercury may occur. It is clear that patients suffering from hypertension and sense impairment of the circulatory system should avoid conditions and obligations which are likely to cause excitement.

Another effect readily produced by sympathetic impulses is the increase of blood sugar. The influence of emotional disturbance in bringing about a hyperglycemia in men subjected to the intense stresses of competitive sports or critical examinations I have pointed out elsewhere.<sup>1</sup> The same phenomenon has been observed in diabetic patients, probably because the sugar excretion is watched more closely in such persons. Woodyatt<sup>17</sup> cites the following from among many similar experiences in his practice—

A man of 65 years, a diabetic, was in the hospital on a quantitative diet and with a small dose of insulin daily was passing a sugar-free urine. Suddenly one day, without any change in regimen, he secreted 43 grams of sugar. And on another day he secreted 76 grams and developed a mild acidosis, the glycosuria, therefore, could not have been due merely to the taking of extra food. A careful checking of all the circumstances and tests proved that there was no error of technique, nor did examination reveal any evidence of intercurrent physical disease. It was found, however, that the patient had received news which led him to fear that the corporation in which he had been an officer for more than 20 years had taken steps to retire him. That was the occasion for his disturbed sugar metabolism.

As Woodyatt remarks, "It is interesting to be able to measure the power of emotion in terms so tangible as ounces of sugar. *The power of emotions to produce physical alterations of the body* does not seem unreal under these conditions."

There is evidence that violent emotional disturbance can produce profound effects on the organism through influences on the thyroid gland. Marañon<sup>18</sup> has collected an extensive series of cases of hyperthyroidism brought on by stressful experiences during the Great War. Recently Emerson<sup>19</sup> has reported some striking instances of hyperthyroidism which followed intensely affective scenes in the lives of the patients.

One was a married woman who had had two illegitimate children and whose husband committed suicide in her presence as a rebuke to her manner of living. Thereupon she dropped to the floor and exhausted herself in shrieking. At once she had a sense of constriction of her throat and was troubled with difficulty in swallowing. The thyroid gland enlarged and six weeks after the incident she had a

metabolism 65 per cent above normal. Later troubles of an exacting character were associated with the development of high blood sugar and a high arterial pressure.

Another case. A man of twenty years had a quarrel with his fiancée. She, pretending to commit suicide, had in his presence swallowed some pills and fallen down screaming. The man departed hastily. Within a week he was suffering from swelling of the neck and nervousness. When he appeared at the hospital four months later he had lost weight, he presented a large goitre over which a definite thrill could be felt and his basal metabolism was up 24 per cent above the normal level.

A third case was that of a married woman who had seen her husband kill his two brothers. The husband bitterly reproached her for not coming to his defense at the trial. A week after the trial a goitre became evident and reached a large size in seven days. When she came to the hospital a few months later the goitre was huge, it pulsed visibly, had a palpable thrill and was causing an oppressive sense of suffocation. There was pronounced exophthalmus with marked tremor and restlessness. The basal metabolism varied from +40 to +117 per cent.

There are other emotional effects on bodily functions which might be mentioned, such as disorders of menstruation<sup>20</sup>, emptying of the bladder<sup>21</sup>, secretion of milk<sup>22</sup>, discharge of adrenin<sup>23</sup>, altered coagulability of the blood<sup>24</sup>, increase in the number of red corpuscles<sup>25</sup>, and others. Enough instances have been given, however, to show that there are effects wrought on the organs innervated by the sympathetic nervous system—glands both of external and internal secretion and parts supplied with smooth muscle—that are just as real as the effects which are produced when the biceps is used to lift a weight. A remarkable difference lies in the level of the nervous control of these two effects. Whereas the biceps is usually managed from the cortex, the viscera are managed from the diencephalon. Whereas the biceps is under "voluntary" control, the viscera are not under that control, but are influenced favorably or unfavorably by processes associated with feelings and emotions. Although the neural center for emotional expression is subcortical, indeed, is low in the brain-stem—yet cortical processes are involved in the total reaction to a situation which evokes strong feelings. We might be frightened by a real bear, but not by a stuffed bear. The discrimination between the two is made by the cortex. How may this relation between cortex and thalamus be interpreted in physiological terms?

Earlier I have pointed out that an emotional reaction has many of the characteristics of a reflex response. To evoke a reflex an appropriate stimulus must be applied, an irritant in the larynx produces coughing, food in the mouth calls forth a flow of saliva. Similarly with the emotional expressions. Watson<sup>26</sup> has studied new-born babies and has found that from the beginning loud sounds and also indications of loss of support are the natural stimuli for the

## SOME UNPROVED IMPRESSIONS CONCERNING THE SUBJECT OF HEART DISEASE\*

BY SAMUEL A. LEVINE, M.D.†

**D**URING prolonged and intimate observation of a great variety of patients suffering from heart disease, one cannot help but develop certain impressions as to the nature of the disease, entirely apart from the more orthodox conceptions that prevail. Some of these impressions in the natural course of time will turn out to be ill-founded. Others however, it may be difficult to prove and yet they may serve as helpful working hypotheses. This is particularly true of those matters which require extensive statistical study for their complete elucidation. Good examples of the latter are the impressions that prevailed some time ago that rheumatic heart disease was definitely more common in the northeastern states of this country than in the southern. This has been quite well established more recently. The same has been true concerning the familial tendency of rheumatic fever or of rheumatic heart disease. This was thought by many to be true for some years before the work of Dr. St. Lawrence in New York quite definitely established the fact. It is the type of such impressions that I wish to discuss at this time.

We are all familiar with the frequent difficulty in deciding whether certain children suffering from vague complaints really have rheumatic fever or not. It is quite clear that many of them need have no arthritis whatever and yet have rheumatic fever. We are often presented with the problem of interpreting chest pain, palpitation, the presence of a simple systolic murmur or other vague symptoms like fatigueability or nervousness, apart from the more usual criteria of rheumatic infection. There are two features in many of these children that have proved helpful in deciding whether the problem is one of rheumatism or not. These are repeated epistaxis and attacks of painless nausea and vomiting. These symptoms have not seemed to bear any necessary relation to the more outspoken evidence of rheumatic infection, namely polyarthritides or active chorea. At times, they occur with the onset of the initial disease and at other times there is a story that goes back for years of repeated nosebleeds or spells of vomiting occurring during a time when the patient is apparently well, and finally, they may occur after the patient has recovered from the fulminating rheumatism while back at school and in fair health. The exact relation of these symptoms to the underlying disease is obscure, but it is surprising

how frequently they occur, certainly more so than can be explained on the basis of chance. As a practical matter, they have been valuable as secondary features in estimating whether some of the patients with atypical findings were suffering from rheumatic infection.

All of us have been greatly impressed with the importance of the familial factor in various kinds of heart disease. This is true, both of the rheumatic group of heart disease and of the degenerative type such as is found in hypertension or in coronary disease. It has impressed me in recent years that one may go still further and say that there are individuals who inherit the general vulnerability to vascular disease, whether infectious or degenerative. Too frequently to be accidental have I noted the presence of rheumatic heart disease in the children and coronary disease in the parents. There are many families in which the father has angina pectoris or has died of it and one or more of the children have rheumatic valve disease. It would require very extensive statistical study to prove the truth of this impression. It is obvious that if this is true, we cannot be dealing with a question of contact infection or inheritance of the same disease, for one is infectious and the other is degenerative. It must therefore be that a definite vulnerability of the vascular system exists that is transmitted.

The constitutional factors behind the development of morbid states have been called to our attention in the masterly work of Dr. Draper of this city. His teachings I have followed with great interest and have seen to be applicable in three different types of disease, namely pernicious anaemia, angina pectoris and to some extent the rheumatic infections. It is striking how many children with freckled faces and red hair come to heart clinics and how many stocky well-set men have angina pectoris. Other characteristics of the anginal patient, it has seemed to me, have been round rather than flat forearms and in these individuals the skin fits tightly around the limbs and abdomen. All this leads me to the conclusion that the infectious agent producing rheumatic heart disease, which is very prevalent in this part of the country and is occurring more frequently than we recognize, runs a mild atypical course and produces heart or valvular damage in those with a vulnerable vascular system. This can explain many cases in which a child may have mild symptoms slight fever, occasional aches, nausea and epistaxis in which no permanent heart injury occurs. One may compare this conception of the frequency of rheumatic fever with the general opinion that anterior poliomyelitis is much commoner than is recognized and

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†For record and address of author see "This Week's Issue" page 90.

complaint is not found, nothing is easier than to attribute the difficulty to nervous factors. There is danger, when one emphasizes the importance of nervous factors as disturbers of the bodily peace, that one may be understood as minimizing the need of search for a gross pathology. Nothing could be farther from my intention. The assumption that emotional agencies are causing mischief in the organism should be a last resort—an explanation which is offered only after every effort has been made to find another explanation. And even when the cause is ascribed to fear or rage or some other strong feeling, proof for that conclusion should be carefully sought both at the source of the trouble and in the effect of appropriate therapy. Nor should the possibility be overlooked that along with profound emotional disturbance there will be discovered a demonstrable lesion. The two conditions, the altered structure of some organ and the altered function of the nervous system, may be causally related, and may have to be treated as a single disorder. Certain it is that only when they are both regarded as the perturbations of a single unity, the organism, will they be properly conceived and effectively treated.

I have tried to indicate the ways in which the functions of the body may be upset by the neural processes which are associated with emotions. I hope that I have convinced you that interest in this realm of medicine should not

be relegated to cults, mental healers and the clergy. The doctor is properly concerned with the workings of the body and their disturbances, and he should have, therefore, a natural interest in the effects of emotional stress and in the modes of relieving it. The field has not been well cultivated. Much work still needs to be done in it. It offers to all kinds of medical practitioners many opportunities for useful studies. There is no more fascinating realm of medicine in which to conduct investigation. I heartily commend it to you.

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- 19 Emerson. Trans Assn Am Phys 1927 xiii 346.
- 20 Mayer. Schwarz's Psychogenese und Psychotherapie Körperlicher Symptome. Vienna 1925 p 298.
- 21 Schwarz. Ibid p 273.
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- 24 Cannon and Mendenhall. Ibid 1914 xxxiv 251.
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- 27 Pavlov. Conditioned Reflexes. Oxford 1927.

When we turn to the prevention of heart disease, there has been considerable discussion concerning the rôle that foci of infection and the tonsils play as causative factors. These questions have by no means been satisfactorily answered. There is however one factor that has seemed to me to be of some importance and yet has received insufficient emphasis. I refer to the question of weight. We are generally accustomed to think of average weights in relation to age, height and sex in advising our patients. It must be remembered that average figures are not necessarily the best and are made up of good, bad and indifferent elements. The optimum weight at one age may be above the average and at another age may be below the average. This I believe to be true in relation to heart disease. It is very rare indeed to see chorea in an obese child and uncommon to find a child who is overweight come down with the first attack of rheumatic fever. On the other hand, after the age of 35 or 40, thin individuals seem to be less likely to develop angina pectoris. In fact I believe that to be well and below average weight at the age of 40 means a distinctly greater life expectancy. It follows from the above that in an attempt to prevent heart disease we should try to have children above normal weight and adults after 40 below the standard figures.

A final subject that at present is receiving a great deal of attention and emphasis I feel deserves discussion. I have reference to the relation between physical activity and cardiovascular disease. There is an intensive wave of enthusiasm throughout the country for athletics, both in the young and in the old. There is simultaneously a nation-wide interest in the great prevalence of cardiovascular disease. I have felt for a long time that the evidence in favor of the beneficial effect of athletics upon the circulation is very meagre. There has been great confusion in the minds of many between the production of a sense of well being and a feeling of fitness that follows athletics, and an improvement in the circulation. Certain muscles in the body may be strengthened by exercise but I find no proof that

the strength or health of the circulation is similarly improved.

From the point of view of longevity the most important factor in the body is the circulation. This part of our body is never at rest and is not subject to the deterioration that may come from disuse. Is it not logical to believe that the more it is used the sooner it will wear out? It is evident to all physicians that when there is circulatory failure of the congestive type physical activity aggravates the condition and rest improves it. It would be queer if the laws of nature were so fickle that the reverse of this were true after the circulation in the same sick patient had already been improved. The most satisfactory criterion of the state of the circulation when the question of congestive heart failure is to be considered is the patient's ability to breathe. In measuring this, apart from the common methods of physical examination the vital capacity of the lungs has served as a satisfactory guide. This has been well shown by Dr. Peabody and his co-workers to improve with rest. If exercise actually improves the strength of the circulation and the vital capacity of the lungs is an indication of this improvement then it would follow that men in training would have abnormally high readings. In carrying out some observations on Marathon runners some years ago, on men who had been running long races for years and who were the most experienced Marathon runners in this country I found no such general increase in the vital capacity of the lungs. Some were normal, some were below normal and some were increased. Large numbers of our young men at schools and colleges are playing strenuous games like football and the older men at present are playing tennis and golf so enthusiastically that one may well wonder about the possible harm that the vascular system undergoes as a result of the added work. These matters so far as I know have not been subjected to satisfactory statistical proof, but it is very impressive to me how many of the vigorous athletic men are dying of coronary disease. Is it merely accidental or is it cause and effect?

## THE FLUOROSCOPIC REMOVAL OF METALLIC FOREIGN BODIES IN THE BRONCHI\*

BY D. CAMPBELL SMYTH, M.D.†

**I**N the presentation of this paper, I must admit at the very outset that there is in it very little that is new. Fluoroscopic aid in the removal of opaque foreign bodies from the air passages has been used more or less for a number of years. I can remember, more than four-

teen years ago one patient with a small screw nail in a terminal bronchus, which was successfully removed by this method. However, at that time there was not nearly the precision and accuracy in the method that there is today.

This paper is more or less a plea to use fluoroscopy early rather than leave it as a last resort procedure. In my opinion it should be employed early in selected cases as the danger of removal by this method has been exaggerated.

Read before the Eastern Section of the American Laryngological, Rhinological and Otolaryngological Society, held at Brooklyn, New York, on January 4, 1927.

†For record and address of author see "This Week's Issue," page 970.

that only a small proportion develop the characteristic nerve lesions

Another striking phenomenon that occurs in one of the important types of heart disease that needs explanation is the great frequency with which the identical blood vessel is involved in cases of coronary thrombosis. In 80-90% of the cases of coronary thrombosis, the left descending coronary artery is the site of the main injury. This apparent specificity or localization of the degenerative process is a phenomenon which deserves more attention than has been paid to it. It is, furthermore, quite remarkable how commonly a particular part of this vessel is involved. Frequently that portion of the left coronary artery which lies about one inch from its origin is the site of the lesion. The question that comes up is whether some individuals have a peculiar anatomical architecture of the heart or some queer curves in the course of the vessel which predisposes them to early sclerotic changes. If this were true, it would fit in logically with the great frequency with which we see early angina pectoris occurring in certain families. For, after all, anatomical structures with their peculiarities are the evident characteristics that we inherit.

To turn to a different aspect of heart disease that has puzzled me, there are certain incompatibilities between common conditions that are rather difficult to explain. I refer particularly to three matters. The first is the apparent antagonism between auricular fibrillation and angina pectoris. Some years ago I called attention to the great rarity of the two conditions existing together. Both auricular fibrillation and angina pectoris are so common that from a statistical point of view, apart from the fact that they are both heart disorders, one would expect to find numerous instances of their co-existence in the same patient. This, however, is not so—in fact the previous existence of persistent auricular fibrillation, even when compensation has been well established, is a real protection against the development of angina pectoris. I have no adequate explanation for this.

The second incompatibility, attention to which has been called by Dr. Libman and his associates, is the one that exists between congestive heart failure and fibrillation on the one hand and the development of subacute bacterial endocarditis on the other hand. One may go further and call attention to the fact that although mitral stenosis is the most common type of rheumatic valve disease, yet bacterial endocarditis more frequently develops in patients who have had aortic insufficiency than in those who have had mitral stenosis. This does not mean that the aortic valve is more commonly involved in subacute bacterial endocarditis than the mitral valve, but if the patient has evidence of mitral stenosis, he is distinctly less liable to develop subsequent bacterial endocarditis. It is those patients who

either have aortic insufficiency, or who have a mitral systolic murmur without evidence of mitral stenosis, who are the most vulnerable in this regard. I wonder whether this question is linked up with the presence of scar tissue. The dense fibrous leaflets that are seen in mitral stenosis are not unlikely less fertile soil for the super-added infection by the streptococcus viridans. Most of the mitral valves that are seen at autopsy in cases of bacterial endocarditis give the appearance of having been in a fair state of health before the terminal infection developed. This would explain the rarity of subacute bacterial endocarditis in rheumatic patients who have persistent auricular fibrillation and in patients who have had congestive heart failure, for in both of these conditions the tissue of the mitral valve is apt to be dense and fibrous. It would also explain the frequency in aortic insufficiency, for here congestive heart failure is a very late development and the span of life after it occurs in an aortic case is apt to be short. Because of the fact that auricular fibrillation in rheumatic heart disease is almost always associated with mitral stenosis and that congestive heart failure in a patient with mitral stenosis comes most commonly after auricular fibrillation has set in, it would not be expected that bacterial endocarditis would develop so frequently under these circumstances, if dense fibrous tissue is an inhibitory factor.

The third antagonism that seems to exist in certain types of heart patients is their comparative freedom from tuberculosis of the lungs. In the Peter Bent Brigham Hospital we have had only one proved case that had both pulmonary tuberculosis and mitral stenosis. Viewed from the other angle, I learn from the physicians in Saranac that cases of mitral stenosis are almost unheard of amongst their hundreds of tubercular patients. One might speculate and say that the mechanical factor of increased pulmonary pressure and consequent passive hyperaemia of the lungs militate against the development of pulmonary tuberculosis. But may it not also be true that fundamentally two different constitutional factors are involved, a vulnerability to rheumatic infections or to vascular disease and a predisposition to tuberculosis, and that the presence of the one means the absence of the other? For, even in cases of rheumatic aortic insufficiency where there need be no congestion of the lungs for many years, it has seemed that tuberculosis is rare. A further point in this connection is the great rarity of pulmonary tuberculosis in hypertensive individuals. Although this does occur, the frequency of both conditions in the same individual seems to be uncommon. Dr. Minor of Asheville who has had an extensive experience in the treatment of tuberculosis has stated that he practically never finds hypertension, and the converse of this is true in clinics where large numbers of patients with hypertension are observed.

The patient, a young woman under treatment for active tuberculosis was in the habit of having a glass of milk at her bedside to drink during the night. One night, as she drank it, she felt something stick in her throat. The pain persisted until I saw her three days later. X-ray examination showed a very small open safety pin at the entrance to the oesophagus.

Under local anesthesia a thorough search was made among the swollen folds at the upper end of the oesophagus. Finally deciding the foreign body might have been dislodged and pushed along a large Mosher oesophagoscope was passed down the oesophagus but no foreign body was seen. Another

with fluoroscopic aid. No reaction followed the operation.

#### CASE III N H Aet 35

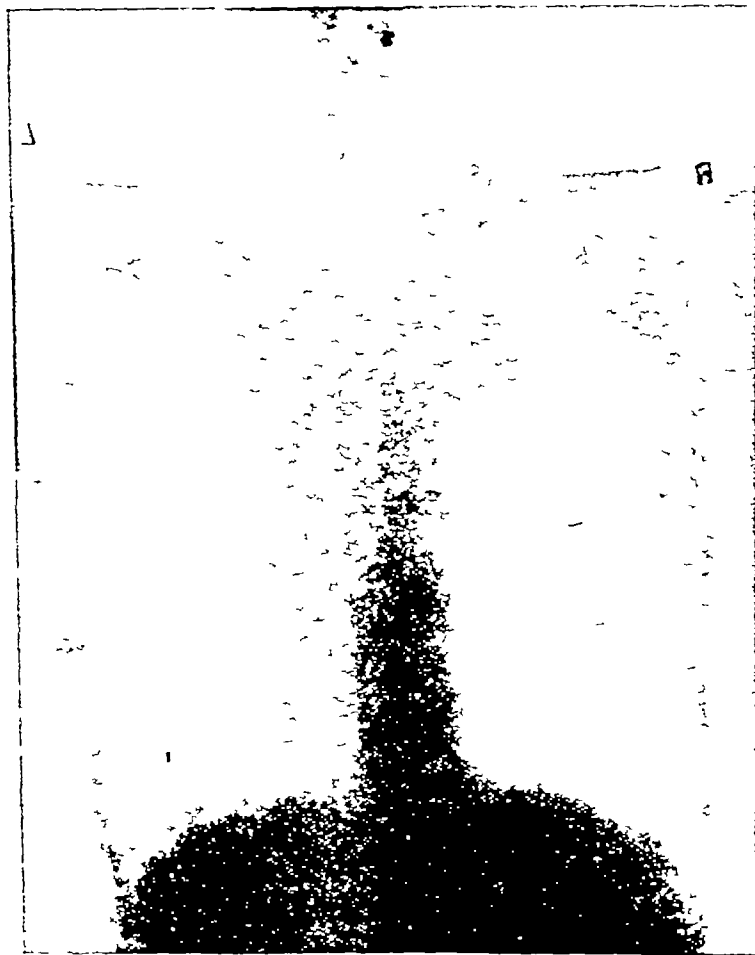
History of frequent attacks of bronchitis for two years following a tooth extraction.

X-ray showed what proved to be a flat amalgam filling in the right bronchus.

An attempt made to remove the foreign body by direct vision was unsuccessful. The foreign body was neither seen nor felt.

Several days later the foreign body was located and removed under fluoroscopic control.

No reaction followed the operation.



CASE I

Small inverted safety pin hidden among the folds of the upper end of the end of the Oesophagus

X-ray showed the foreign body in the same location. The following day the patient was placed on the fluoroscopic table and with a two-plane fluoroscope the pin was very quickly located and removed from among the oedematous folds.

#### CASE II E M Aet 31

Inhaled a shawl pin eleven days ago.

X-ray showed that the pin had gone down the right bronchus.

February 23 1926. An unsuccessful attempt was made to remove the foreign body by direct vision.

X-ray following operation showed the pin farther down, evidently deep in a terminal bronchus.

Three days later the pin was successfully removed.

#### CASE IV J K. Aet. 9

Patient came to the hospital with a history of tonsillectomy a few days before. At the operation two teeth were lost.

X-ray at that time was said to show one in the intestinal tract, and the other in the right bronchus about the opening of the middle lobe.

An unsuccessful attempt was made to remove the foreign body by direct vision.

The foreign body was located and removed from the middle lobe bronchus several days later under fluoroscopic control.



In fact, I doubt very much if the mortality is at all raised, if the work is gently and carefully done, and the exact location of the foreign body thoroughly studied beforehand by roentgenogram and fluoroscopy. The higher mortality by this method is, in my opinion, largely accounted for by the fact that it is used in the more desperate cases, and often left as a last resort in those cases where it would have been successful after one try by direct vision had failed.

Of course, I admit that the ideal way of removing a foreign body is by direct vision, but as I just stated when one real attempt by a competent bronchoscopist by direct vision has failed, or when it is known previously that the intruder is lodged in a terminal bronchus, especially if it has resided there for a very considerable time with probable granulations in, or even cicatricial stenosis of, the affected bronchus, fluoroscopic removal should be resorted to rather than blind removal by using the end of a grasping forceps as a probe, and attempting to seize the foreign body in the dark. While, then, removal by direct vision, as I stated, is the method *par excellence* when this is not possible, we have at hand fluoroscopic vision, the nearest approach to real vision. Therefore, my inclination is to regard the fluoroscope as a first aid. With its employment the danger of grasping lung tissue and tearing it is certainly much slighter than if the foreign body is removed by tactile sensation alone, for by this method we still have our tactile sensation plus fluoroscopic vision.

The operator must be gentle in his manipulations, avoiding trauma and at the same time if he has an expert fluoroscopist, he will be told a great deal about the manipulation of his forceps and their relation to the foreign body. He must be prepared, before he starts, to completely subordinate himself to the fluoroscopist and to follow explicitly his directions, even to the point of letting go of the foreign body when told to do so, in order that a more favorable grasp for safe removal be made. This has occurred in one or two of our cases, notably in the case of a tack, which I grasped at about the middle, removing it in this way would have perforated the bronchus. I was told to push it down farther to dislodge the point, and was able immediately to grasp it in such a way as to make removal safe.

During the last two years at the Massachusetts Eye and Ear Infirmary fluoroscopic removal has been resorted to in eight patients, once by Dr. Green, once by Dr. Herman, once by Dr. Poirier, twice by Dr. Mosher, and three times by myself. In six of these patients one or more attempts by direct vision had failed, while in the seventh, where the foreign body had been lodged for over thirty-one years and was known to be in a dorsal terminal bronchus with partial stenosis of that bronchus, it was used as the method of first

choice, with success. In the eighth patient the foreign body, a large dental bridge, was grasped by direct vision and extracted under fluoroscopic control. The fluoroscopist in all those cases was Dr. A. S. MacMillan, Massachusetts Eye and Ear Infirmary.

As to the choice of anesthesia, we do not confine ourselves to any one, but rather try and suit it to the individual patient. In bronchoscopy for lung mapping and treatments we use local anesthesia combined with morphine. We do the same in most instances where the foreign body has been in the lung but a short time. Where we know the removal is going to be difficult, and especially if the foreign body has been lodged for a long time, we use general anesthesia as first choice, usually ether, either rectal or by mouth.

One of the great drawbacks of general anesthesia has been the difficulty of grasping foreign bodies well down at the base of the lung, due to the excursions of the foreign body with the diaphragm movements, sometimes this movement being as much as one and one-half to two inches. Under fluoroscopic removal this excursion bothered the operator and fluoroscopist a great deal until I found that by holding the diaphragm on the side of the foreign body, it was possible to keep it stationary, or nearly so, thus making grasping of the intruder much more accurate. It is equivalent to telling a patient to hold his breath, when using local anesthesia.

The time required for removal of the foreign bodies in these cases varied from one to forty-five minutes. This I do not regard as a constant important factor. In young children the element of time is important, of course, especially with non opaque foreign bodies where the children, when they come to us, are desperately ill. In adults with any acute condition present it is again a factor, but in adults where the foreign body has been lodged for a long time and no acute condition is present, as much time as would be consumed for any major surgical operation may be taken without reaction of a serious sort, provided the operator is careful to avoid all traumatism and his every manipulation is gentle.

I have seen less reaction to prolonged bronchoscopy in such cases than in the very short bronchoscopies under local anesthesia in lung abscesses. Naturally, of course, it goes without saying that once the bronchoscope is introduced, it should not be removed, neither should its excursions in and out be any more than absolutely necessary.

#### CASE HISTORIES

##### CASE I M C Aet. 30

It may seem ridiculous to require fluoroscopy for the removal of a foreign body from the upper end of the oesophagus, but in this patient it was a decided aid.



CASE II

Showing the pin further down in terminal bronchus after the attempt had been made to remove it by direct vision. It was easily removed from this location with the aid of the fluoroscope.



## CASE II

Showing a pin in the right main bronchus before an attempt was made to remove it by direct vision

CASE V M S Aet. 5

History of cough and loss of weight for three months No history of inhalation of foreign body Temperature on admission was 101°

Child had a loose nonproductive cough X ray showed an upholstery tack in the right bronchus with no air in the lower part of the lung

July 11, 1926 Attempt made by direct bronchoscopy to remove foreign body failed

July 15, 1926 Attempt by fluoroscopy failed Tack located in right middle lobe bronchus

July 28 1926 Tack removed by fluoroscopy (vertical screen) at side of child

scopist in the left bronchus, and quickly removed from its new location

The child had an acute bronchitis at the time and the quick location of the foreign body in the left bronchus by fluoroscopy was a decided aid

CASE VII S M Aet. 39

This patient had a history of inhaling a gold headed scarf pin over thirty-one years ago During her early childhood the case was repeatedly diagnosed as probable tuberculosis on account of her persistent cough with bloody sputum

Ten years ago she was seen by an expert on tuber



CASE III

Showing a flat amalgam filling which proved to be buried in the wall of the right main bronchus Inhalation was two years previous First attempt at removal by direct vision was unsuccessful Several days later it was easily removed under fluoroscopic control

The foreign body was first grasped at the centre of the shaft. Tactile sensation showed resistance. The fluoroscopist advised moving the foreign body downward. The grasp was then released and the point of the tack immediately picked up by following the fluoroscopist's directions

Numerous plates were taken at intervals to show the condition of the lung

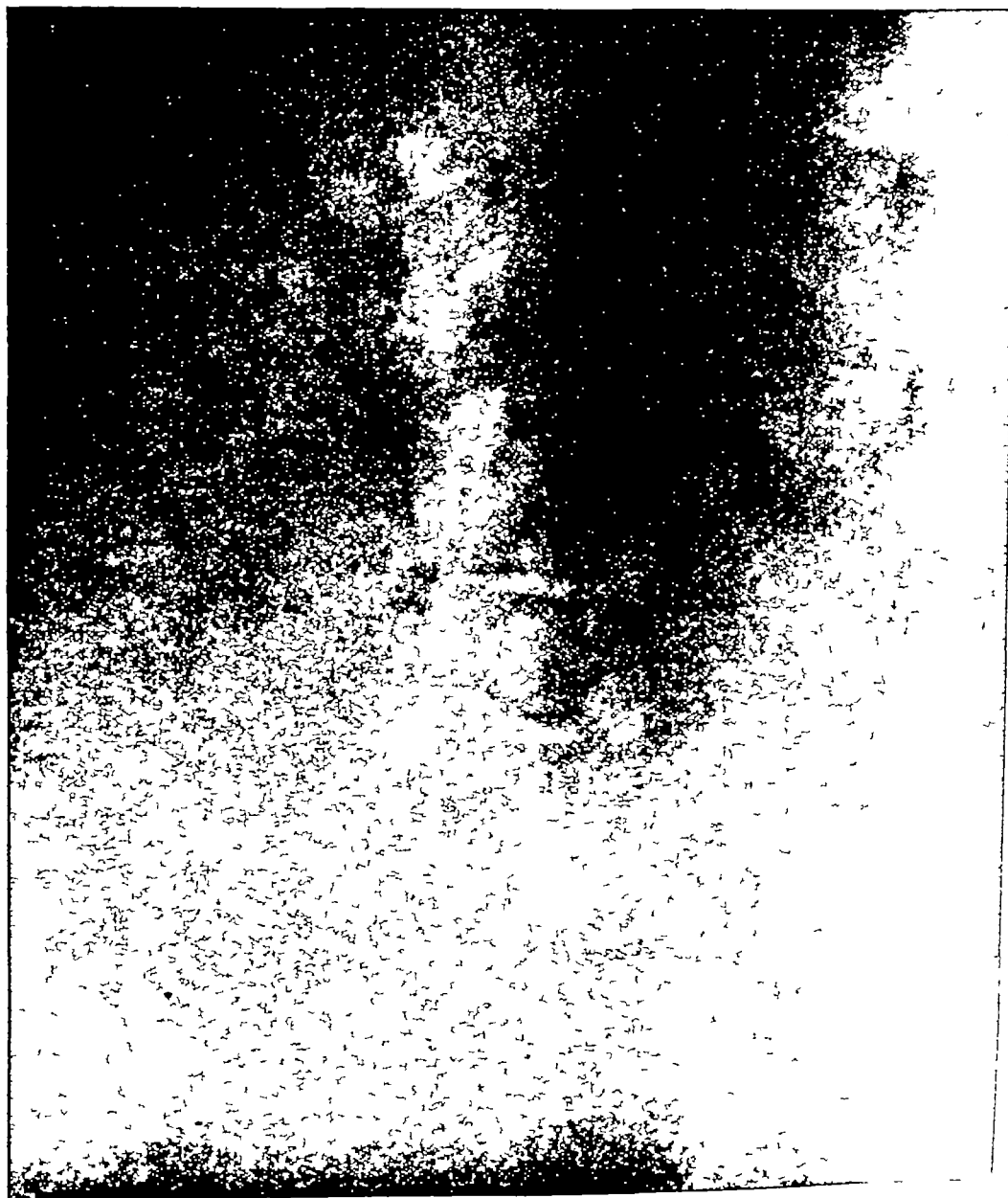
CASE VI R. T. Aet. 2

Carpet tack in right bronchus for three weeks

While being extracted the tack was lost at the glottis. It was immediately located by the fluoro-

scopist in the left bronchus, and quickly removed from its new location

I first saw her last July. She gave a history of at present having an almost constant cough especially in the winter at times raising a fairly large amount of sputum and then going a number of weeks

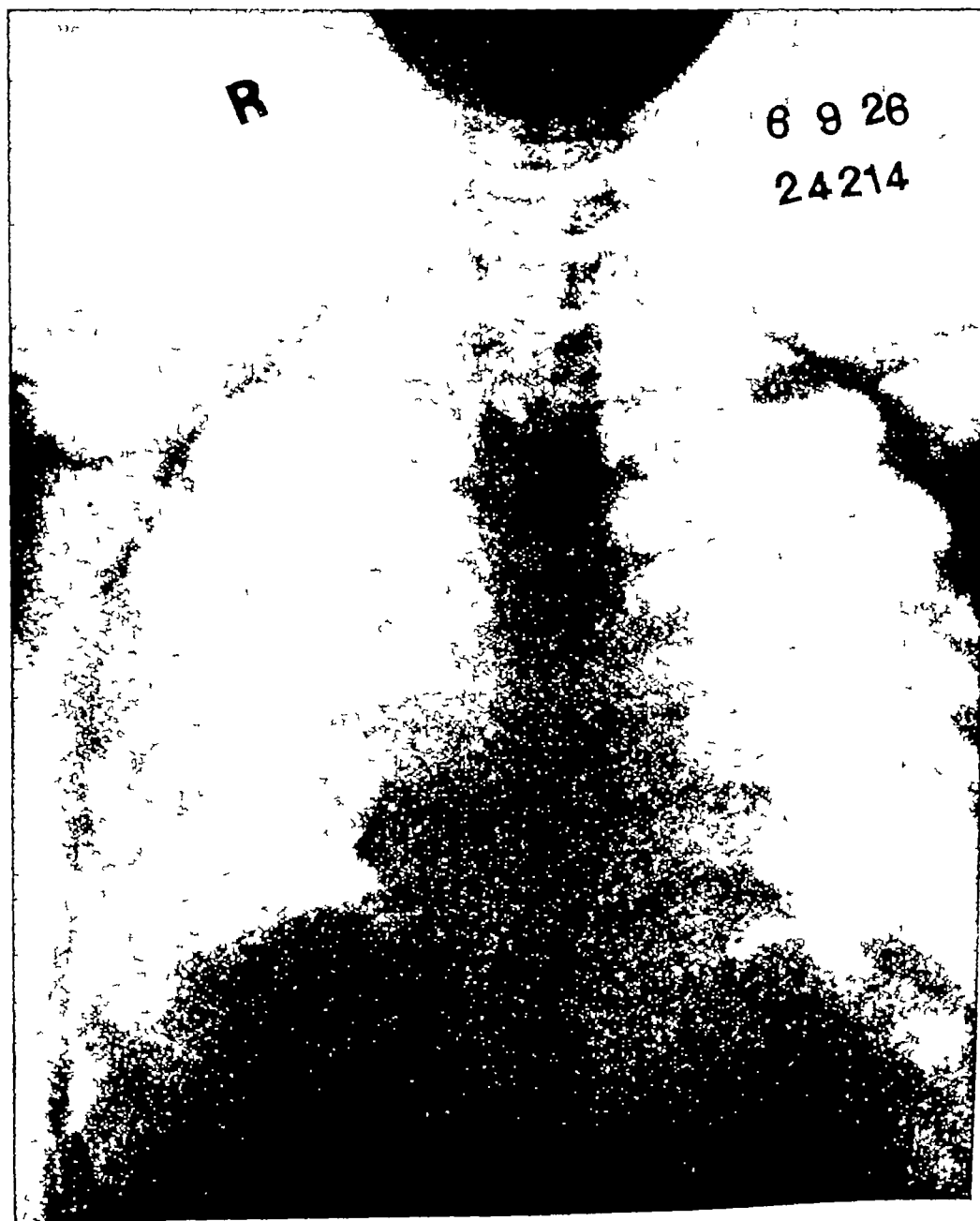


CASE II  
A lateral view of the same patient



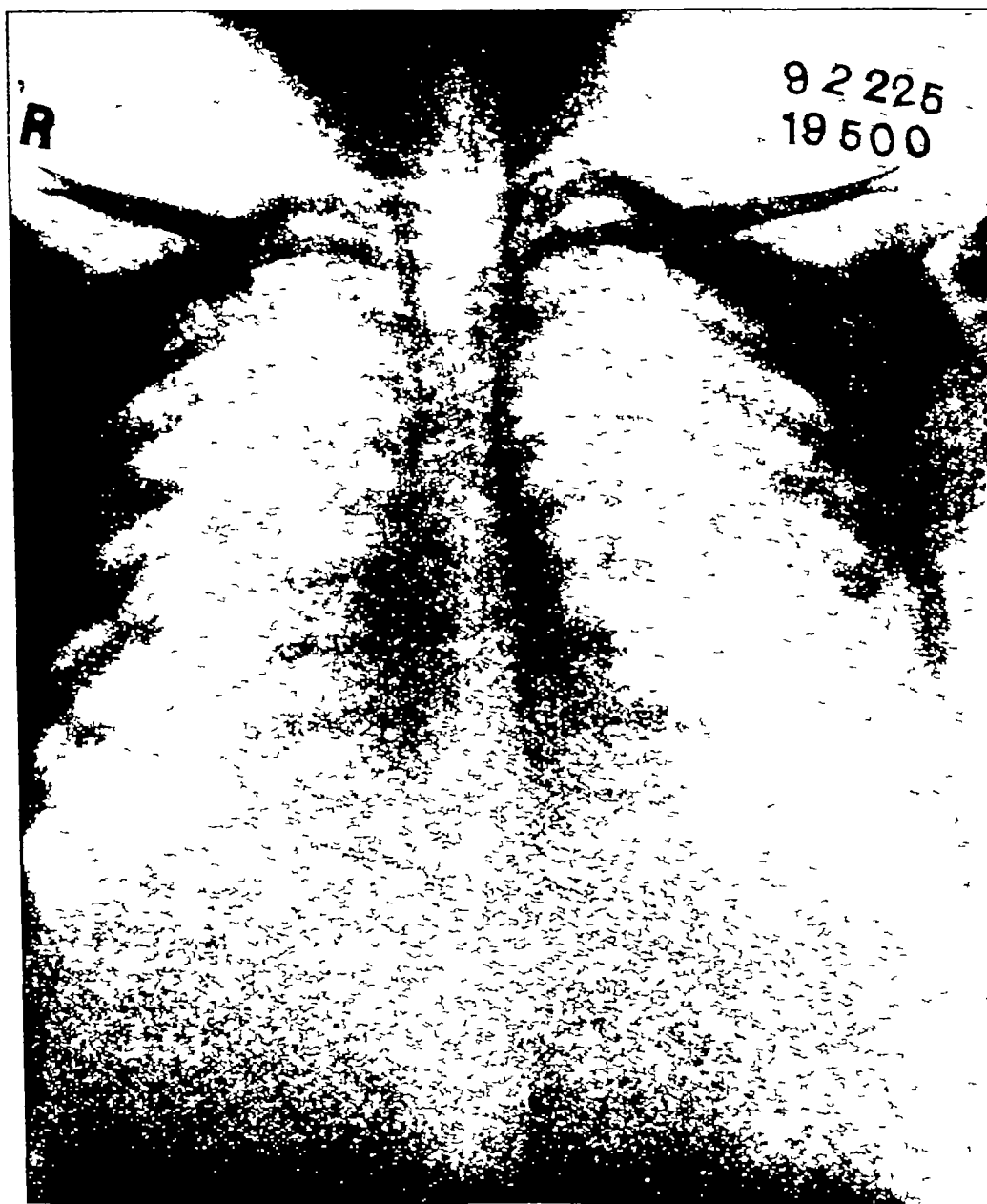
CASE V

Showing upholstery tack in the right middle lobe bronchus in a patient 5 years of age. The history pointed to inhalation about 2 months before. This foreign body was removed by fluoroscopy using a vertical screen at the side of the patient.



## CASE IV

Showing a small deciduous tooth in the right middle lobe bronchus of a child 9 years old inhaled during tonsillectomy. Removed successfully with the aid of fluoroscope after one attempt by direct vision had failed.



CASE V

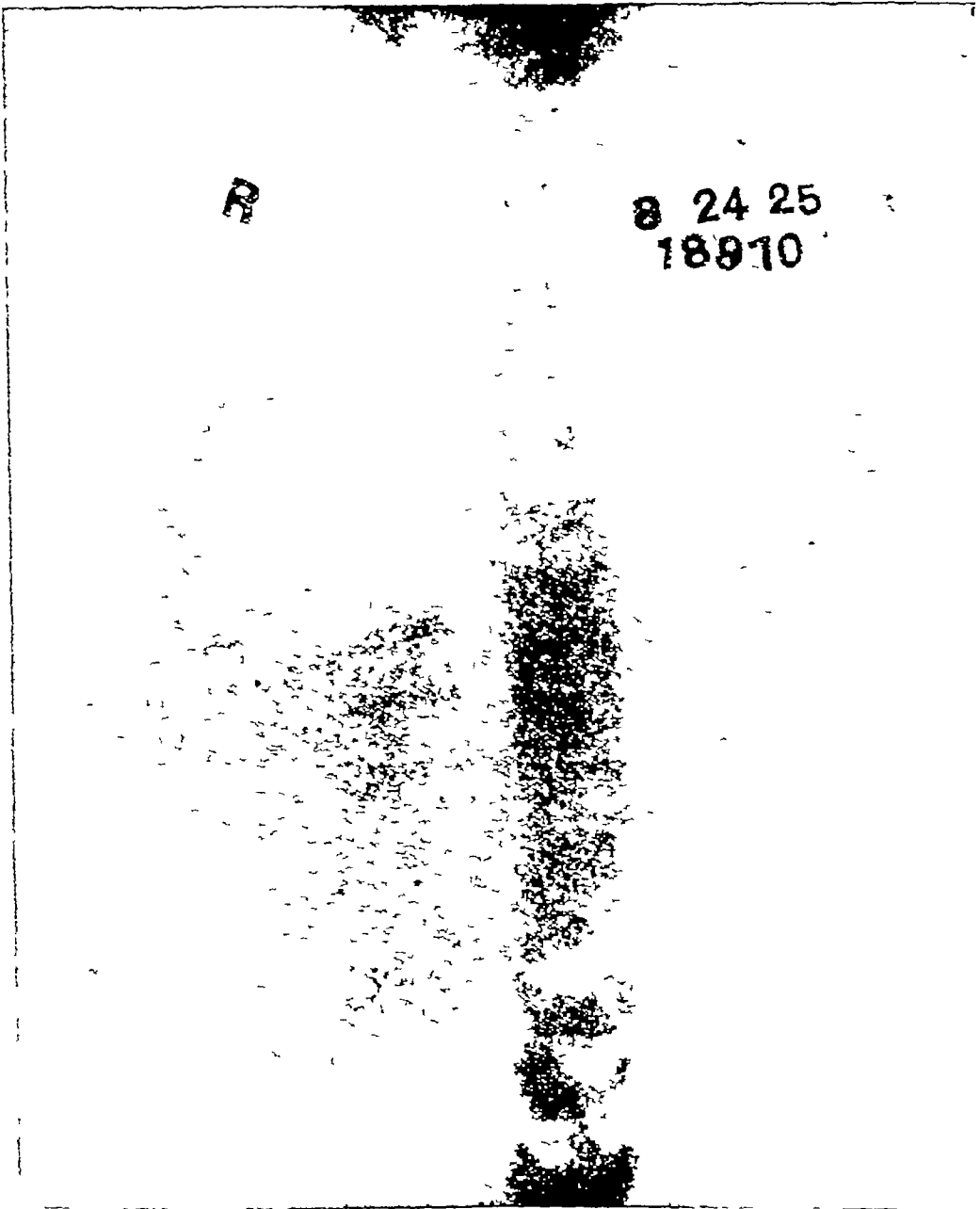
Another plate 2 months later showing the lung apparently restored to normal with the heart in normal position.





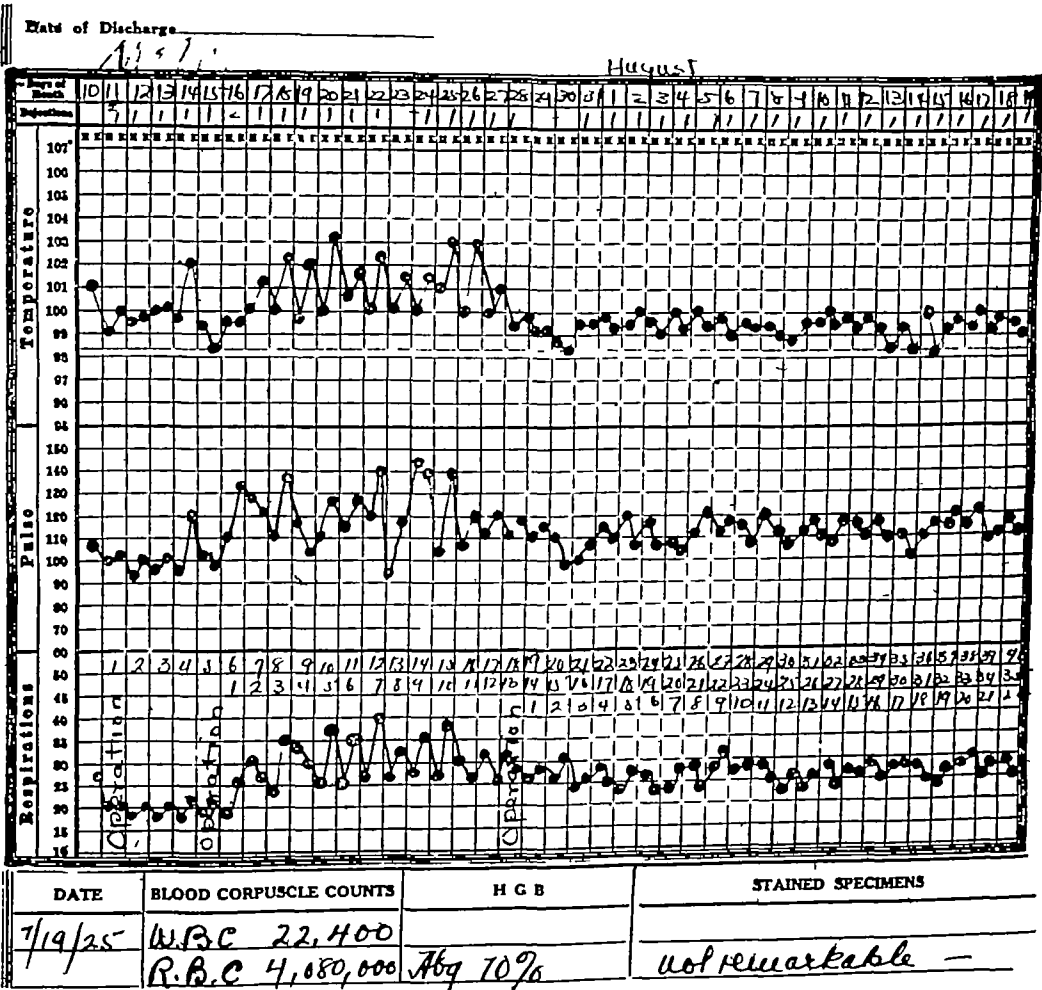
## CASE V

Showing the chest about 4 weeks later There is still considerable consolidation at the right base and the heart is still pulled over

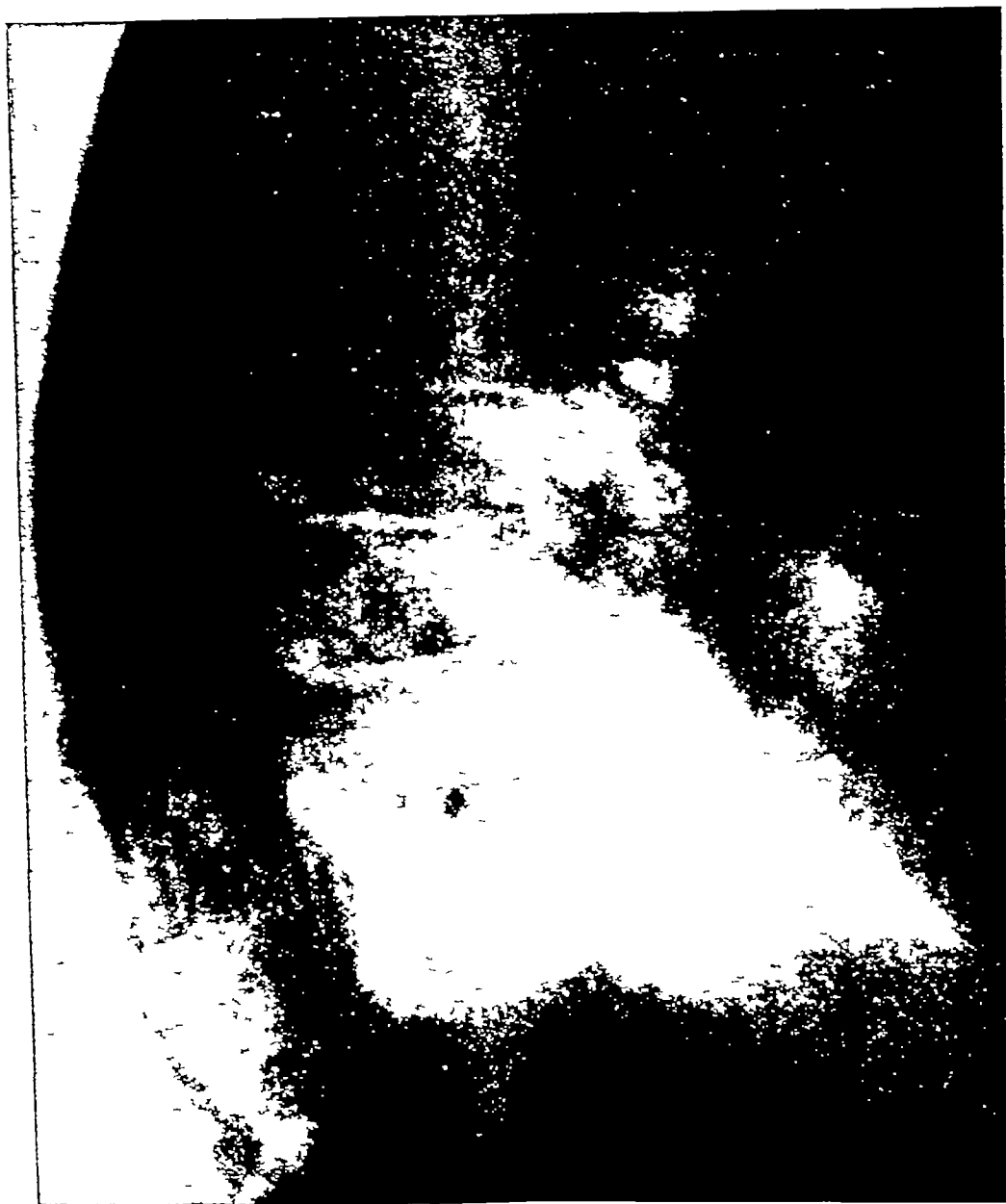


CASE VI

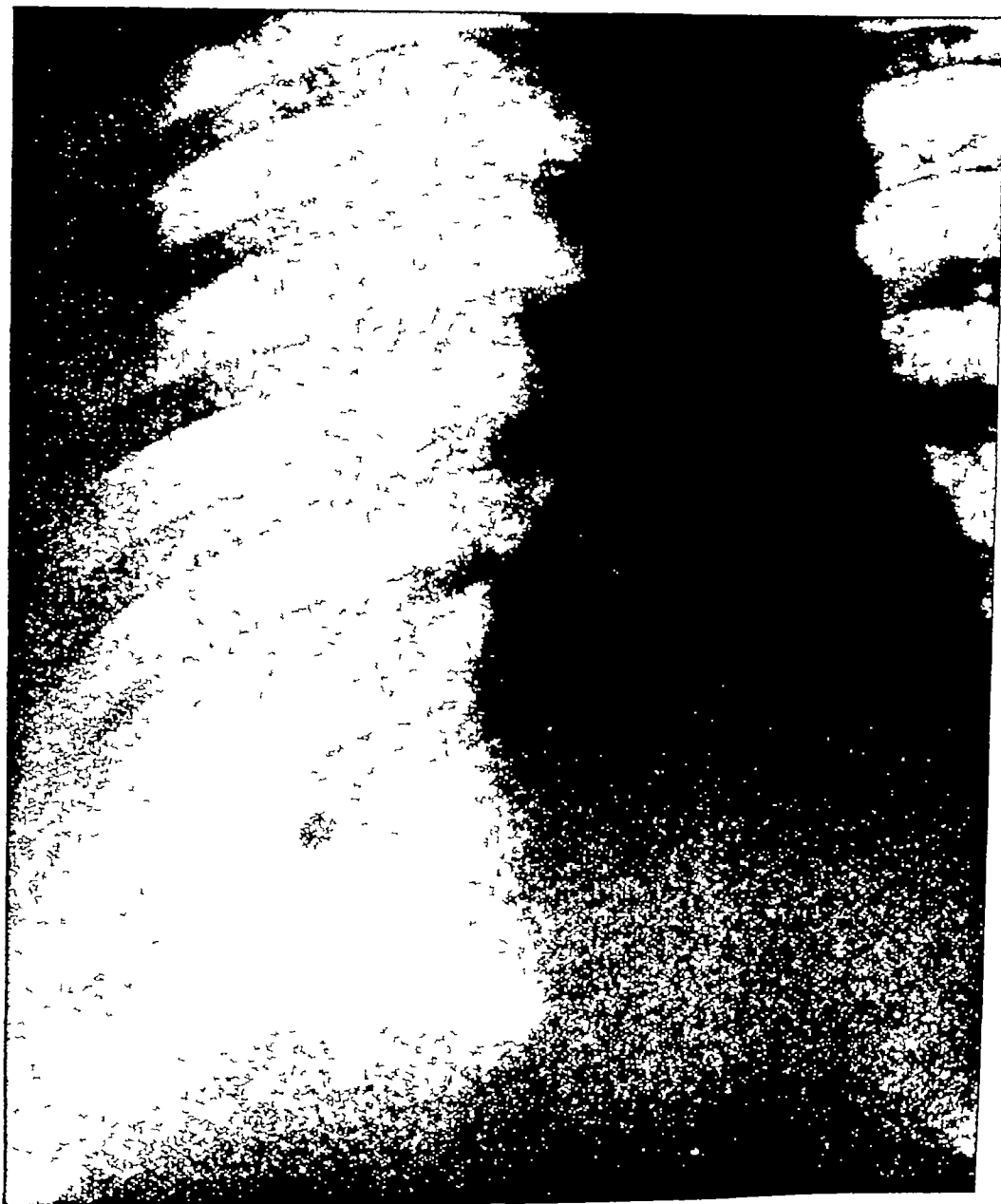
Showing ordinary carpet tack in the right lung for 3 weeks. An attempt was made to remove it under fluoroscopic control. At the glottis it was lost and immediately found by the scopist in the left bronchus from which it was easily and quickly removed.



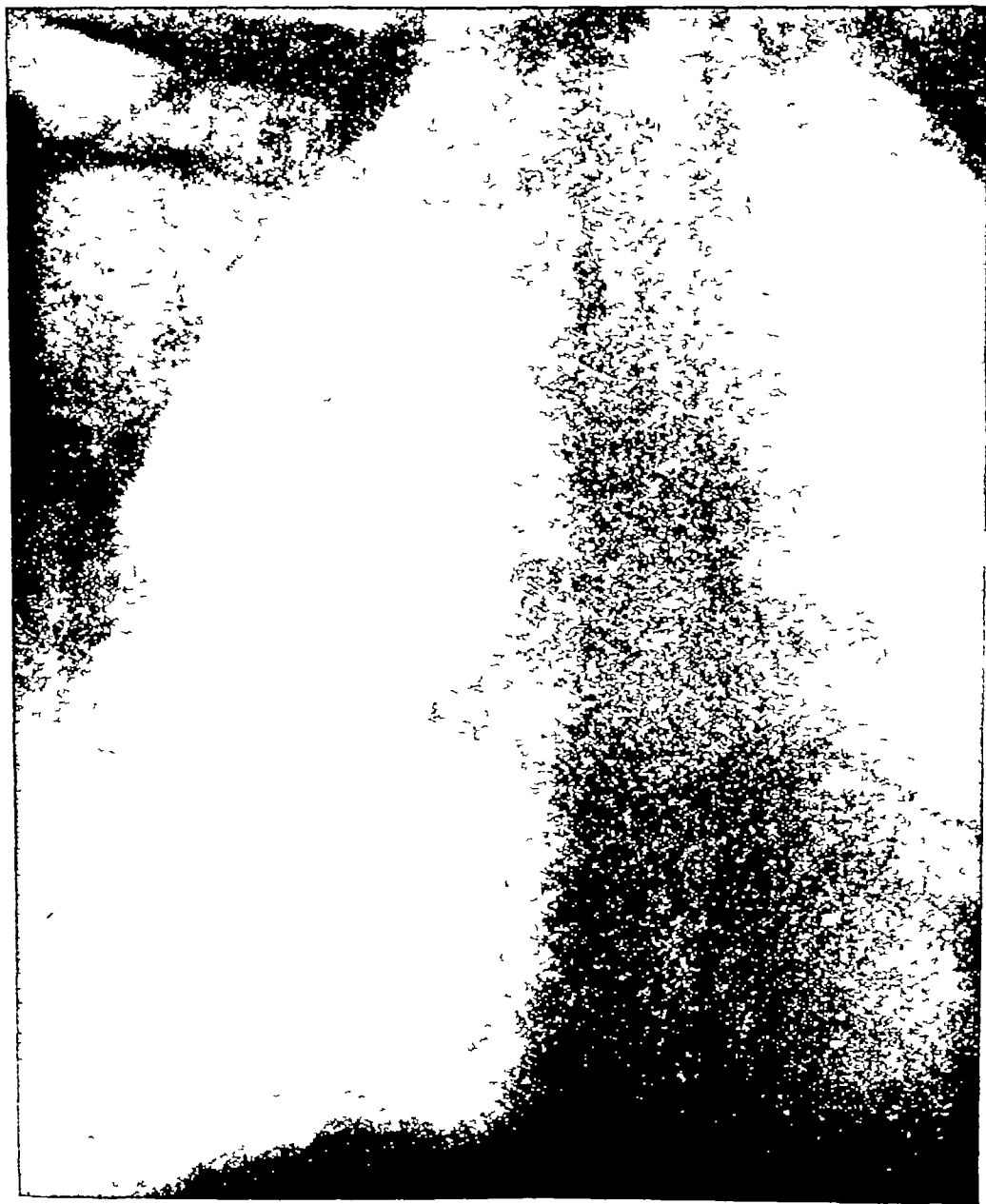
CASE 1  
Showing temperature chart during patient's stay in Hospital



CASE VII  
Lateral view of same patient.

**CASE VII**

Showing the gold head of a scarf pin in the right terminal bronchus. This foreign body had been lodged in this location for over 30 years. After locating the terminal bronchus which was stenosed, and dilating it the foreign body was located and removed under fluoroscopic control.



CASE VIII

Showing a bridge of teeth in the right bronchus which had lodged there for 2 months. The removal of this foreign body was guided by fluoroscopic control.



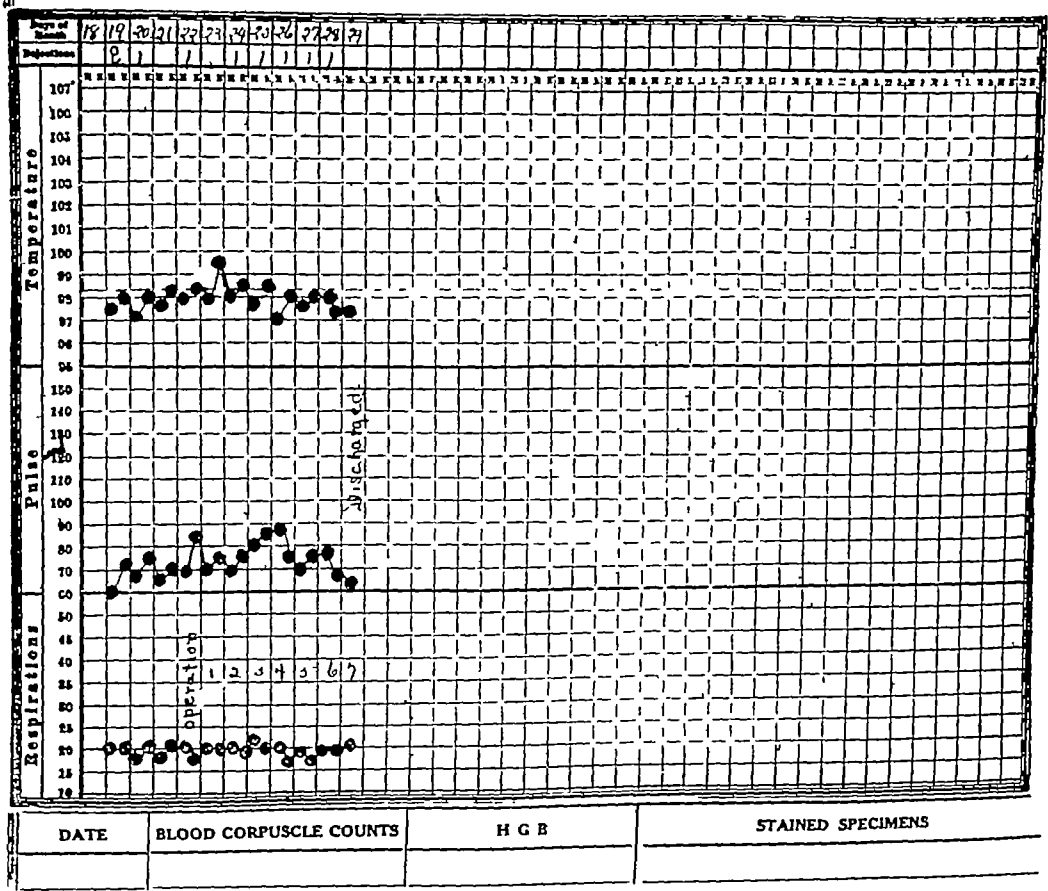


CASE VIII

Showing a bridge of teeth in the right bronchus which had lodged there for 2 months. The removal of this foreign body was guided by fluoroscopic control.



Diagnosis \_\_\_\_\_  
Complications \_\_\_\_\_ Path No. \_\_\_\_\_  
Date of Discharge \_\_\_\_\_



CASE VII

Chart of the same patient while in the Hospital. Note that the removal of foreign body in this patient required 45 minutes the patient being under general anesthesia. Notwithstanding this there was no reaction following the operation.



CASE VIII

Showing a bridge of teeth in the right bronchus which had lodged there for 2 months The removal of this foreign body was guided by fluoroscopic control

without any The X ray at this time revealed what was left of the scarf pin, namely, the head, in a dorsal terminal bronchus By roentgenogram and fluoroscopy the shaft appeared to be gone

The history of this case together with the pre operative study by roentgenogram and fluoroscopy made me quite sure that there was considerable atresia of the mouth of the affected bronchus

It was therefore determined to make no attempt by direct vision, so I immediately resorted to the fluoroscope When the bronchoscope was passed down to the bottom of the main bronchus, the pathological terminal bronchus was easily recognized by its very small lumen and the red areola about it. Following dilatation of the opening there was a gush of mucous tinged with blood It was impossible to feel the foreign body either with forceps or probe, although told by the fluoroscopist that I was up against it From this point onward I was entirely directed in my movements by the fluoroscopist and finally succeeded in dislodging it from the anterior wall of the bronchus Although the operation lasted about forty five minutes there was no after reaction following it, as shown by the temperature charts

This patient was operated on under general anesthesia and it was very pleasing to me that an assistant was able to hold the foreign body stationary by controlling the movement of the diaphragm on the right

#### CASE VIII J N Aet 40

Bridge of teeth in right lung inhaled two months ago during an attack of "uremia" X ray showed a large tooth bridge at the bottom of the right bronchus

Under a local anesthesia a nine mm bronchoscope was passed and the foreign body easily recognized, with some granulations about. This foreign body was grasped by direct vision but extracted under fluoroscopic control When tension was started to draw the foreign body away, considerable was required, and in the fluoroscope the bronchus was seen to come with it. Suddenly the foreign body was dislodged from its bed and came so easily that the operator thought he had lost it, but was immediately informed by the fluoroscopist what had happened and that he still had a firm grasp of the foreign body, which was easily removed

#### CONCLUSIONS

(1) Fluoroscopy should be regarded as a first aid and not as a last resort in the removal of opaque foreign bodies from the bronchial tree

(2) It should be at hand in all cases where the foreign body has been in the lung for a long period, making the chances of seeing it by direct vision or of feeling it, very small

(3) It should be used after one attempt at removal by direct vision has failed, provided the attempt has been made by a competent bronchoscopist, and everything possible has been done at the first trial

(4) The mortality is not appreciably raised by this method

(5) The anesthetic should be selected according to the conditions to combat

(6) Fluoroscopic removal is preferable to removal of the foreign body by tactile sensation alone

(7) Under general anesthesia the excursion of the foreign body can be controlled by an assistant fixing the diaphragm on the side of the intruder This is of very great assistance in accurate grasping of the intruder This point, so far as I know, is new

(8) Provided no acute condition is present, the duration of bronchoscopy in adults is of secondary importance, the most important thing being gentleness, which means lack of any trauma In other words, the bronchoscopist should not strive primarily for speed, but should rather exercise the greatest patience and his manipulations should be the most gentle possible This conclusion is not based on the series of cases reported in this paper alone but rather the result of my observations in quite a considerable number of foreign bodies in the air passages of fairly long duration

(9) An expert fluoroscopist is necessary and should share fifty-fifty any success achieved by the operator

# MASSACHUSETTS TUBERCULOSIS LEAGUE

## THE FUTURE RESPONSIBILITY OF RESEARCH IN TUBERCULOSIS\*

BY WM CHARLES WHITE, M.D.†

"NATURE cures all curable diseases" This was the opening sentence of the professor of pharmacology in the school of medicine in which I took my education. He did not appreciate the significance of his words for he thereupon began in a long series of lectures to list the evidences to prove that man is the sole agent of nature and recorded the empiricism of the past and present to guide the class before him. He was however but repeating what Paracelsus in 1538 in his *Labarynthus Medicorum* had stated in these words—Let it be known then to all men that had not God created and placed in the bodies of men natural remedies and a natural physician then notwithstanding all the efforts of our physicians not a single creature of earth would remain alive.

I quote them but to emphasize that we have not advanced in tuberculosis beyond nature's cure in spite of all the funds and effort we have spent on its study. For all our vaunted organized attack over a quarter of a century almost all we can offer to the sick is the rest in bed to allow the body, if it can, to accomplish a cure. We have learned means of enhancing this but daily with all the care that can be exercised many slip to the great beyond, a total of deaths that makes us hesitate in our conceit.

What doth it profit a man to say—Tuberculosis is curable—when man does not control the cure. I doubt if any physician in the whole history of the world can raise his hand and say "I cured this case" yet through all the ages the majority of those suffering from tuberculosis have been cured by nature.

Let me show you some of the questions of tuberculosis with which we are faced over the short series of years in which we have reliable records. We are prone to think that the world began and ends with us but as a matter of simple fact it stretches from infinity to infinity. We have few accurate records up to one hundred years ago but such as we have constitute our only guide to the future.

We have just passed through an early diag-

nosis campaign I am afraid of the word "early" which we use so carelessly in this regard. "Early" refers to time but we have forced upon it another meaning before the public without thought of the impression such a meaning may give. For every physician who deals with tuberculosis "early" really means a small amount, and we know that many cases diagnosed with the greatest skill at the earliest possible moment go on to death sometimes with great rapidity in spite of every care. But we go merrily forward with an educational campaign that assures the lay mind that if he but come *early* his salvation is sure. We are creating therefore in the public mind a thought from which we shall reap a harvest of mistrust later.

I have another complaint to offer. For fifteen years I lived with advanced and dying consumptives until the question "Doctor, can't you do something for me?" forced me to ask myself if by more careful study something could not be done for these doomed cases. A month ago with Dr. Pollak of New Jersey I went through the wards of his excellent sanatorium and again my heart sank within me as I saw the sad eyes of the dying consumptive with the same plaint. It is the cry of the doomed of all time. I think that annually those who conduct the campaign against tuberculosis should visit with a doctor of human sympathy the wards of the dying consumptive so that our thoughts may be guided by increasing effort toward that knowledge which will enable us to stop the ravages of this disease.

There is a group of other facts that have come forward in the last decade that also force us to pause in our enthusiasm of education based on insufficient knowledge.

- 1st The war period and the rise in the mortality curve during the years the war continued. This was a shock to many who felt secure in a declining death rate which however is known to have long preceded the campaign efforts.
- 2nd The shift in the mortality rate for young girls to the left. It will scarcely profit us if our potential mothers die before the maternity period.

Remarks made before the Annual Meeting of the Massachusetts Tuberculosis League, Springfield, Mass., April 30, 1925.

†For record and address of author see "This Week's Issue" page 90.

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#### CASE VIII J N Aet 40

Bridge of teeth in right lung inhaled two months ago during an attack of "uremia" X ray showed a large tooth bridge at the bottom of the right bronchus

Under a local anesthesia a nine mm. bronchoscope was passed and the foreign body easily recognized, with some granulations about. This foreign body was grasped by direct vision but extracted under fluoroscopic control When tension was started to draw the foreign body away, considerable was required, and in the fluoroscope the bronchus was seen to come with it. Suddenly the foreign body was dislodged from its bed and came so easily that the operator thought he had lost it, but was immediately informed by the fluoroscopist what had happened and that he still had a firm grasp of the foreign body, which was easily removed

#### CONCLUSIONS

(1) Fluoroscopy should be regarded as a first aid and not as a last resort in the removal of opaque foreign bodies from the bronchial tree

(2) It should be at hand in all cases where the foreign body has been in the lung for a long period, making the chances of seeing it by direct vision or of feeling it, very small.

(3) It should be used after one attempt at removal by direct vision has failed, provided the attempt has been made by a competent bronchoscopist, and everything possible has been done at the first trial

(4) The mortality is not appreciably raised by this method

(5) The anesthetic should be selected according to the conditions to combat

(6) Fluoroscopic removal is preferable to removal of the foreign body by tactile sensation alone

(7) Under general anesthesia the excursion of the foreign body can be controlled by an assistant fixing the diaphragm on the side of the intruder This is of very great assistance in accurate grasping of the intruder This point, so far as I know, is new

(8) Provided no acute condition is present, the duration of bronchoscopy in adults is of secondary importance, the most important thing being gentleness, which means lack of any trauma In other words, the bronchoscopist should not strive primarily for speed, but should rather exercise the greatest patience and his manipulations should be the most gentle possible This conclusion is not based on the series of cases reported in this paper alone but rather the result of my observations in quite a considerable number of foreign bodies in the air passages of fairly long duration

(9) An expert fluoroscopist is necessary and should share fifty-fifty any success achieved by the operator

## MASSACHUSETTS TUBERCULOSIS LEAGUE

### THE FUTURE RESPONSIBILITY OF RESEARCH IN TUBERCULOSIS\*

BY WM CHARLES WHITE, M.D.†

"NATURE cures all curable diseases" This was the opening sentence of the professor of pharmacology in the school of medicine in which I took my education. He did not appreciate the significance of his words for he thereupon began in a long series of lectures to list the evidences to prove that man is the sole agent of nature and recorded the empiricism of the past and present to guide the class before him. He was however but repeating what Paracelsus in 1538 in his *Labarynthus Medicorum* had stated in these words—Let it be known then to all men that had not God created and placed in the bodies of men natural remedies and a natural physician then notwithstanding all the efforts of our physicians not a single creature of earth would remain alive.

I quote them but to emphasize that we have not advanced in tuberculosis beyond nature's cure in spite of all the funds and effort we have spent on its study. For all our vaunted organized attack over a quarter of a century almost all we can offer to the sick is the rest in bed to allow the body, if it can, to accomplish a cure. We have learned means of enhancing this but daily with all the care that can be exercised many slip to the great beyond, a total of deaths that makes us hesitate in our conceit.

What doth it profit a man to say—Tuberculosis is curable—when man does not control the cure. I doubt if any physician in the whole history of the world can raise his hand and say "I cured this case" yet through all the ages the majority of those suffering from tuberculosis have been cured by nature.

Let me show you some of the questions of tuberculosis with which we are faced over the short series of years in which we have reliable records. We are prone to think that the world began and ends with us but as a matter of simple fact it stretches from infinity to infinity. We have few accurate records up to one hundred years ago but such as we have constitute our only guide to the future.

We have just passed through an early diag-

nosis campaign I am afraid of the word "early" which we use so carelessly in this regard. "Early" refers to time but we have forced upon it another meaning before the public without thought of the impression such a meaning may give. For every physician who deals with tuberculosis "early" really means a small amount, and we know that many cases diagnosed with the greatest skill at the earliest possible moment go on to death sometimes with great rapidity in spite of every care. But we go merrily forward with an educational campaign that assures the lay mind that if he but come *early* his salvation is sure. We are creating therefore in the public mind a thought from which we shall reap a harvest of mistrust later.

I have another complaint to offer. For fifteen years I lived with advanced and dying consumptives until the question "Doctor, can't you do something for me" forced me to ask myself if by more careful study something could not be done for these doomed cases. A month ago with Dr. Pollak of New Jersey I went through the wards of his excellent sanatorium and again my heart sank within me as I saw the sad eyes of the dying consumptive with the same plaint. It is the cry of the doomed of all time. I think that annually those who conduct the campaign against tuberculosis should visit with a doctor of human sympathy the wards of the dying consumptive so that our thoughts may be guided by increasing effort toward that knowledge which will enable us to stop the ravages of this disease.

There is a group of other facts that have come forward in the last decade that also force us to pause in our enthusiasm of education based on insufficient knowledge.

- 1st The war period and the rise in the mortality curve during the years the war continued. This was a shock to many who felt secure in a declining death rate which however is known to have long preceded the campaign efforts.
- 2nd The shift in the mortality rate for young girls to the left. It will scarcely profit us if our potential mothers die before the maternity period.

Remarks made before the Annual Meeting of the Massachusetts Tuberculosis League Springfield Mass. April 30 1923

†For record and address of author see "This Week's Issue" page 940

- 3rd The rise in tuberculosis in pigs contrary to our predicted results which were based on the decline of tuberculosis in cattle
- 4th The rise in tuberculosis in chickens as a regional and spreading malady of fowls
- 5th The decline of mortality of tuberculosis in the colored race keeping pace with the decline in the white race And yet for the colored race we can scarcely claim a beginning of our control methods

The National Tuberculosis Association appreciating these perplexing questions with a foresight characteristic of its work from the beginning appointed a Committee on Medical Research early in 1915 with the entrusted duty of systematically searching for more accurate knowledge of this universal acid fast group of parasites in its relation to disease of man and animals

It is a pleasure to me to come to Massachusetts at the request of Dr Kendall Emerson, your President, to discuss the work of this committee because this whole country in its early history owes much to this state. If one reads the record of the early days of Massachusetts and the United States it is quite clear that many of our present methods began here. The first Board of Health, the first State Sanatorium, the first evidence of the relation of soil and moisture to tuberculosis, the first evidence of the relation of pure water to the declining death rate from tuberculosis and other maladies,—all began here. Whether Massachusetts is still in the forefront of the good health movement I leave you to answer.

Names stand out in the early history of this state and the United States that are mileposts in our national public health history. Bowditch, Derby, Sedgwick, McNutt, Smith and many others. The story of Henry I Bowditch, the father of a former president of this society, Dr Vincent Bowditch, and his observations on soil and moistures are especially interesting to day as we are now considering a study of the fate of tubercle bacilli in the soil concerning which we know nothing and which returns in principle to these early studies and observations of Dr Bowditch. Then one is constantly brought back to the studies of Sedgwick and McNutt on the influence of cleanliness in the shape of pure drinking water and proper sewage disposal on the decline of many of our infectious diseases including tuberculosis. Therefore I repeat that I am glad to be here at Dr Emerson's request as he is one of the men such as Pope speaks of whose sympathy rises from self till it includes all mankind as the spreading wave of a disturbance in the surface of a placid lake.

A responsibility for expenditure in research you will realize was a serious one and yet it seemed a sure duty of the National Association and its state units and no one cared to shirk it. A small committee appointed worked for two years and then came forward with a tentative

plan which the association adopted and work was slowly begun.

This plan contemplated

- 1st A chemical fractionation of a chosen tubercle bacillus strain on synthetic medium and a biological study of the influence of each fraction isolated on the normal and tuberculous animal
- 2nd A comparison with this base line organism of all the different strains of tubercle or acid fast bacilli
- 3rd A study of the living chemistry of the cells of the body in which the bacillus grows
- 4th A study of the problems of light waves in connection with these two living cells which grow together and cause our greatest economic disease problem

Many fundamental problems were carefully planned and charted before beginning work for, as Schuller said, "The head must plan before the hand can execute." You will appreciate the supreme nature of this task when you see the extent of its organization. The National Tuberculosis Association of which, under the guidance of Dr Emerson and Mr Kiernan, you are one of the great units, has been successful in obtaining the cooperation of the U S Public Health Service, the Bureau of Animal Industry, the Rockefeller Institute, eight universities and two large drug manufacturers who are all banded together for the purpose of getting at the fundamental laws which govern the development of this disease in man and animals. Already after seven years of cooperation a complete revolution in thought has occurred and six of our large states and cities have joined the cooperation by making gifts to help this endeavor—Chicago, Pennsylvania, Philadelphia, Maryland, District of Columbia, Beaver County and the Rockefeller Institute. They have acted thus generously and unasked and solely because their leaders recognize the importance of the search for new knowledge by newer and better methods developed in the primary fields of research. All of their money for these grants, save in the case of the Rockefeller Institute, was raised by the Christmas Seal. Of the 5% which the states send to the National Tuberculosis Association thousands of dollars are spent in this way although the actual amount spent by the association is small in comparison with the actual expenditure, for, from each grant made we receive as a result the guidance and help of the best research men in the United States, all overhead cost such as building, equipment, light and heat, all of which is saved our annual budget.

When an economic question of such importance to human welfare as tuberculosis is the call all men unite their efforts to secure its solution. It is with a reverent honor for mankind that I record the generosity of our best observ-

ers in these fields in this endeavor to find the fundamental laws underlying tuberculous infection

I can do no more than touch upon some phases of this work. Just as in nature the most powerful factors are of a comparative rarity and hence their value, so in the tubercle bacillus apparently its most potent elements are there in minute amounts. For this reason in chemical analysis, to secure a sufficient quantity for later biological study one must start with enormous masses of the living organism. A mass of bacilli about the size of an American cheese is the unit of the first steps. To secure this the manufacturing houses, such as Mulford Company and Parke Davis & Co., must be called into cooperation. During the past three years H. K. Mulford Co. have expended at least \$15,000 in the production of the bacteria for our studies at no

cost to the association. From the manufacturing houses the material goes to Yale and Chicago for fractionation and from there to the Rockefeller Institute, Cornell Medical College and Vanderbilt University for biological study.

The base line for further studies is the human tubercle bacillus against which will be compared the avian tubercle bacillus, the bovine tubercle bacillus, the lepra bacillus and various other strains known to have specific characteristics.

From all of the planned and charted studies it is hoped, and now with a certain assured success, to reconstruct the fundamental chemistry of these tubercle organisms and their host cells in the body, and finally to arrive at the means of controlling and curing this sickness.

Massachusetts should certainly, as a premier state, be a part of this endeavor.\*

Dr. White's paper was illustrated to make the points clearer.



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tion in the large intestine for which a tube was sutured either in the cecum or in some more distal portion of the large gut 13 of the 17 recovered, 2 died and 2 were not followed Of the two who died, one developed pneumonia some days after operation The other patient died of peritonitis which arose from leakage around the tube that was sutured into a greatly distended sigmoid colon

It is evident that when obstruction occurs at the lower end of the intestinal tract that cecostomy can usually be depended upon as a life saving measure and should be used It is also evident that the greatest care must be taken to prevent leakage about the drainage tube since one death occurred from this cause in this group of enterostomies

In 21 patients, enterostomy was done at some point in the ileum usually a short distance above the point of obstruction 9 of these patients recovered and 11 died One patient was not traced These figures are surprising It had been thought that ileostomy done above a low obstruction would in theory at least give the best chance of success These 21 cases include both primary and secondary ileostomies and of course in many instances the ileostomy was done as a measure of last resort

In six cases with intestinal obstruction, a jejunostomy was done with 5 recoveries and one death All of these jejunostomies were done for obstruction coming on from 1 day to 1 week after operation In no case was any procedure undertaken to relieve the actual obstruction and all save one recovered

It is well known that the higher the obstruction the more rapid and more serious is the course of acute obstruction This fact has been repeatedly demonstrated both experimentally and by clinical observation In this connection it is important to note the recent experimental studies made by Haden & Orr<sup>3</sup> with high jejunostomies in dogs

They found that dogs with high jejunal drainage lived only 2 to 5 days, a shorter time than when simple obstruction was caused at the same point, and they found that with a high jejunostomy chemical changes occurred in the blood similar to those of high intestinal obstruction They showed, however, that an ileostomy was compatible with life These facts are worthy of careful note when we consider the point at which we shall drain the intestine in acute obstruction and they have a definite clinical application in the treatment of drainage from the intestine once it has been established A jejunostomy, we believe, should be allowed to drain for but 36 to 48 hours after it has been made since longer drainage may seriously deplete the body of fluid and chlorides After this the tube should be clamped off At four hour intervals the tube should be flushed with normal salt solution and three or four ounces of this left in the jejunum at the close of the ir-

rigation Glucose solution in addition to the salt solution may also be given through the tube If free drainage occurs through the tube it should not be continued for a longer period (36 to 48 hours) than seems necessary to remove the toxic products of the obstruction

We have seen no case in which we felt any harm had resulted to the patient from jejunal drainage All our enterostomy tubes are inserted by either the Witzel method or with a double purse string suture Whenever possible omentum is interposed between the intestine and the abdominal wall In no case has there been a persistent intestinal fistula after the enterostomy tube has been removed Most of the tubes come out on the 6th or 7th day after operation with immediate closure of the fistula

It is but reasonable to assume that since a paralysis of the intestine accompanies peritonitis, that enterostomy should be advocated in the treatment of this condition Indeed it is highly probable that some of the cases of so-called obstruction that were not relieved by enterostomy were in reality cases of peritonitis with paralytic ileus Thus Heidenhain in his original suggestion for the use of enterostomy spoke of its value in the obstruction seen in peritonitis So also did Victor Bonney and some of the cases he treated were cases of obstruction with peritonitis Wilkie<sup>6</sup> states that a post mortem study of cases dying of so called peritonitis 5 to 10 days after operation for acute appendicitis showed that intestinal obstruction accounted for the death of 75 per cent

It is true that as peritonitis advances, paralysis of the musculature of the involved loops of bowel becomes more prominent At first this paralysis is largely localized about the source of the peritonitis but as the infection spreads a generalized distention of the gut occurs This comes from increasing paralysis of sections of the gut and from distention of the remaining gut with gas and fluid proximal to the paralyzed portions There is in peritonitis not only a toxemia from the bacterial infection of a very large endothelial lined cavity but also an acute intestinal obstruction

Certain degrees of peritoneal infection can be withstood and overcome by the human organism It is conceivable that the deciding factor in the recovery from peritonitis is in the degree of intestinal obstruction that occurs with it It is well known that the differentiation of acute intestinal obstruction from acute diffuse peritonitis is very difficult and at times impossible The clinical picture of each condition and also the changes in the blood chemistry are at times identical

It is therefore logical to assume that treatment which is of value in acute intestinal obstruction will be of some benefit in peritonitis In peritonitis we drain the peritoneal cavity in order to reverse the direction of lymph flow and bring antibodies to the infected area The lumen of

## NEW ENGLAND SURGICAL SOCIETY

## ENTEROSTOMY IN OBSTRUCTIONS AND PERITONITIS\*†

BY HOWARD M. CLUTE, M.D., F.A.C.S.‡

**T**HERE are two well established indications for making an enterostomy in some portion of the intestinal tract. These are (1) for the treatment of intestinal obstruction and (2) for the introduction of food, fluid or drugs into the intestinal canal. Recent experience indicates that enterostomy is of some value also in the treatment of peritonitis.

Theories as to the actual agent which causes the symptoms of marked toxemia and collapse so commonly seen in acute intestinal obstruction are numerous but the toxic product that produces the symptoms has not yet been isolated. The material containing the toxin must be in the contents of the intestine, however, which are found proximal to the point of obstruction. Hausler & Foster<sup>1</sup> have shown that the nature of the toxin is more serious when there is, in addition to a simple obstruction, some injury to the intestinal walls such as strangulation. The toxic product, however, whether arising from a simple obstruction or from a strangulated obstruction is to be found in the intestinal lumen just above the point of obstruction. Drainage of these toxic products is the primary reason why enterostomy has been proposed in acute intestinal obstruction and, in my opinion, is the chief indication for the use of enterostomy in intestinal obstruction.

The changes in blood chemistry that accompany acute intestinal obstruction are now well known—the rising non protein nitrogen and carbon dioxide combining power of the blood and the reduction in blood chlorides. It is also generally admitted that many of the symptoms of acute obstruction can be alleviated, some very toxic cases returned to health and convalescence from operation made much smoother by the giving of sterile normal salt solution in large amounts and thus returning the blood chlorides to a normal level.

While attention to the changes in blood chemistry that accompany acute obstruction, particularly the administration of salt solution is of very great importance, the drainage of the toxic products of the obstruction from the intestine must be carried out in most cases if the patient is to recover. The drainage of these products that have formed in the gut as a result of obstruction may be obtained in either one of two ways. The first is by normal bowel movements after relief of the obstruction. The second

is by enterostomy at some point above the point of obstruction.

Enterostomy as a method of treating intestinal obstruction has been in use for at least 25 years. Hubener<sup>2</sup> reports that Professor Heidenhain recommended its use at the 31st German Surgical Congress in 1902 and that he reported 5 cases with 4 recoveries. Victor Bonner<sup>3</sup> recommended jejunostomy in peritonitis in 1910 and in 1916 reported 6 cases with recovery.

Since this time numerous surgeons in this country and abroad have recommended the use of enterostomy alone or in conjunction with measures to relieve the obstruction in patients having acute intestinal obstruction with or without peritonitis. Its most general use, however, has been in intestinal obstruction.

It is extremely difficult to analyze the results of enterostomy in obstruction. We must so constantly compare actual results with the results that we believe might have been if our procedure had been different. All surgeons have doubtless operated upon a very sick case of long standing intestinal obstruction, relieved the obstruction, performed an enterostomy and seen the patient recover, and they have seen exactly similar cases recover equally well with relief of obstruction and no enterostomy. Yet they believe, and in my opinion it is true, that enterostomy is of value in intestinal obstruction. It is logical to assume that the drainage of highly toxic material from the gut in these cases is beneficial. In statistics dealing with the value of enterostomy in obstruction we include cases that are moribund or nearly moribund on whom we do an enterostomy as the one possible chance of saving the patient's life. Death in such a case should not be held against enterostomy but rather against delay in surgical treatment.

In a study of a large series of cases of intestinal obstruction Van Beuren & Smith<sup>4</sup> find that the statistics do not prove that enterostomy has lowered the mortality rate. They admit that enterostomy has been used in only a small percentage of cases (32%) of acute ileus and that it is too often reserved for the exceptionally poor risk cases. These statements, however, do not alter the very strong belief held by most surgeons that enterostomy should be done in acute obstruction as an important part of the mechanical treatment of the case. Doubtless it is not done often enough.

We have performed an enterostomy on 44 patients having intestinal obstruction. Of these 27 or 61% recovered and 14 or 31% died. Three cases could not be traced.

Seventeen of these 44 patients had obstruc-

\*The Lahey Clinic Boston Mass

†Read at the Annual Meeting Manchester N H. October 1 1927

‡For record and address of author see This Week's Issue page 9\*0

believe that a jejunostomy should be added to the usual surgical treatment of all cases of diffuse or generalized peritonitis

#### CONCLUSIONS

1 Enterostomy in acute intestinal obstruction is of value when it removes the toxic products collected above the point of obstruction

2 Drainage of the large intestine in low obstruction gave excellent results Drainage of the jejunum in acute obstruction gave good results

3 Septic peritonitis produces death largely from toxemia arising (1) from the infection and (2) from the products of the intestinal obstruction caused by paralysis of the gut

4 Cecostomy in peritonitis gave very poor results ileostomy in peritonitis gave very poor results, jejunostomy in peritonitis gave quite satisfactory results

5 Jejunostomy should be added to our present methods for the treatment of diffuse septic peritonitis

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#### DISCUSSION

DR R. C. COCHRANE, Boston. I think you will all agree that this is a very important subject and that this is a very interesting paper on this subject. I agree thoroughly with what Dr Clute had to say about the value of enterostomy in obstruction. I think we have all gradually more and more come to doing a high enterostomy rather than draining the intestine close to the obstruction, and in my experience jejunostomy has worked very well in cases of obstruction.

I would like to lay a little stress on the use of hypertonic salt solution and the use of glucose in these cases. The ordinary normal salt solution is of great value and fluids must be used but in certain cases which didn't yield to any other treatment we have found that the use of a small amount 250 cc. of a hypertonic salt solution intravenously gave relief of symptoms where the ordinary salt solution wasn't effective.

It has also been my experience in these post operative obstructions where you do a jejunostomy as a life saving measure that you don't have to do another operation to relieve the obstruction. We found that the obstruction relieved itself spontaneously, and the bowels moved spontaneously in a week or ten days. If a subsequent operation becomes necessary, it should be done early and not later than a week or ten days, otherwise if the obstruction still persists, the patient will die of starvation. This isn't so important in enterostomy lower down

When it comes to the subject of peritonitis, I don't think I can wholly agree with Dr Clute. From my experience at the City Hospital in Boston I haven't seen any value from enterostomy or jejunostomy in any real peritonitis cases. You are dealing there with a paralytic ileus with coils of intestine distended with toxic material and I don't believe you can get rid of that with a jejunostomy. I think you are going to have coils of intestine that you can't drain. Of course, most of the cases of post operative obstruction are due to a more or less localized peritonitis just how extensive it is I don't think any of us can tell exactly, and that is why statistics on these cases do not necessarily prove the point. In a great many of these cases of obstruction you can't tell when you do them whether they are due to an actual obstructing band or a localized peritonitis or a generalized peritonitis. You can't tell until it is too late.

So it is justifiable to go ahead and do your enterostomy before you make your diagnosis, but it has been my experience that the cases that got well were cases of obstruction rather than cases of peritonitis.

DR IRVING J. WALKER, Boston. I quite agree with Drs. Clute and Cochrane as to the value of jejunostomy in obstruction of the small intestine, due to mechanical factors.

My experience with jejunostomy for the relief of ileus secondary to general peritonitis has been disappointing. I wish to speak briefly of thirty-eight cases of the mechanical type of obstruction which followed from five to twelve days after operation. All of these were treated by jejunostomy, with a mortality of 25.6%.

For the most part, the mortality was due to delay in doing the enterostomy or to the fact that the obstruction was complicated by an attending or subsequent general peritonitis. Of those that recovered, 70% were relieved by no other operative measures than jejunostomy.

Where jejunostomy does not relieve the obstruction and where there is an existing septic wound, or an infection within the peritoneal cavity, you have a most unfortunate situation, since exploration for the relief of the obstruction itself is quite likely to result in a mortality from general peritonitis.

Dr. Cochrane spoke of operating for removal of the obstructing element where the bowels do not move through the natural passage following jejunostomy. Where this becomes necessary operation should be done within the first week following jejunostomy. After that time, and in spite of glucose and chlorides being given the patient will be found to have approached a considerable degree of starvation and hence will be a poor risk for operation.

I wish to stress the value of the blood study in these cases of obstruction. Laboratory work has repeatedly demonstrated that with the con-

TOTALS				
	Cases	Dead	Recovered	Unknown
<i>Peritonitis</i>				
Jejunostomy	7	3	4	
		{ 1 embolus 1 pneumonia 1 peritonitis		
Ileostomy	6	5	1	
Cecostomy	8	5	1	2 (probably died)
Total in Peritonitis	21	13	6	2
		61%	28%	
<i>Obstruction</i>				
Jejunostomy	6	1	5	
Ileostomy	21	11	9	1
Cecostomy	17	2	13	2
Total in Obstruction	44	14	27	3
		31%	61%	
Ulcerative Colitis	1		1	
Feeding	8	7	1	
	74	34	35	5
		Dead	Recovered	Unknown

the intestine should also be drained of the products of the obstruction that have accumulated above the paralyzed portion of the intestine. Lavage of the intestine in certain cases will remove the toxic contents whose presence would otherwise be the fatal factor in the combination of peritonitis and acute intestinal obstruction.

Our experience with enterostomy in peritonitis has been limited to 21 cases in which peritonitis was obviously present. It is doubtless true, however, that in some of the 44 patients on whom we report enterostomy for obstruction, there was also present some degree of peritonitis. The 21 cases of frank peritonitis were treated with the usual methods for dealing with peritonitis and in addition had an enterostomy performed. 6 recovered, 13 died and 2 were not traced but probably died.

It is of interest to consider these cases more particularly. In 8 of the 21 patients a cecostomy was done because of the marked distention of the large intestine. Only 1 recovered, 5 died and 2 cases, occurring very early in our experience are of unproven outcome as the result of incomplete records, but may be assumed to have died.

Although the number of cases is small it seems reasonable to state that cecostomy is not of any special advantage in peritonitis.

In six cases of peritonitis an ileostomy was done. 5 died and only 1 recovered. Here again we may rightly infer that ileostomy is not of remarkable value in peritonitis.

In 7 cases a jejunostomy was performed in addition to the usual measures carried out in the treatment of peritonitis. Of these 4 re-

covered, 1 died of embolus several days after operation, 1 died of pneumonia 5 days after operation and 1 died of peritonitis. It seems fair to say that jejunostomy plus other treatment cured 6 out of 7 patients with peritonitis.

From this small group of 21 cases in whom the intestine has been drained for peritonitis we are struck with the relatively greater benefit which has been derived when the drainage has been instigated high in the intestinal canal. And if we consider that in draining the intestine in peritonitis we are attempting to treat simply the factor of intestinal obstruction which accompanies the peritonitis, the results seem consistent. Some years ago it was our practice to drain the *dilated* intestine at the point of obstruction. It now seems more advisable to go above the point of marked dilatation and paralysis and drain the intestine which is not involved in the paralytic process. Here the gut has not yet lost its power of contraction and many of the toxic products arising from the obstruction can be obtained from the tube.

The writer has operated recently upon two patients with perforating appendicitis and diffuse peritonitis by performing an appendectomy with drainage and then doing a jejunostomy through a separate upper left abdominal incision. In each case purulent material with gross signs of peritonitis filled the pelvis and also escaped from the incision made in the left upper quadrant. Each patient made a surprisingly complete and uneventful recovery. We quite realize that it is possible that each patient might have recovered without the jejunostomy but in our judgment this is very unlikely.

These and other similar experiences lead us to

## FIBROLIPOMA, REPORT OF A CASE

BY JOSEPH S BARR, M D \*

**T**HIS case is reported, not because of the rarity of the condition, for lipoma is perhaps the most common of benign tumors, but because of its unusual size and accessibility

G W, Surg 29908 entered the Peter Bent Brigham Hospital Oct. 20 1927 He is a married electrician, age 58 The family and past histories are irrelevant.

Eight years ago he first noticed a small growth "like a wart" in the region of his right clavicle It has increased gradually but constantly in size until the present time For the past several years he has had to have his clothes altered to accommodate the tumor beneath them It occasions him no pain or discomfort except for a slight sense of dragging weight on the shoulder It has not interfered with his work the day before entry he was on a step-ladder cleaning windows He seeks relief on the advice of the company physician who discovered the tumor in the course of a routine examination

Physical examination is essentially negative except for the local examination which reveals a pedunculated tumor the size of a foot ball, depending from the right supraclavicular region The pedicle is 3.5 cm in diameter and contains numerous blood vessels over which a distinct bruit is heard on auscultation The tumor itself is 36 cm long and 28 cm in diameter The skin is intact over the growth but there is marked hyperkeratosis with deep fissures over the lower part of the mass It is completely anaesthetic below the pedicle There is no regional lymphadenopathy X-ray examination of the lung fields is negative The laboratory findings are essentially normal except for a moderate quantity of sugar in the urine

Oct. 26 under gas-oxygen anaesthesia the tumor was amputated The pedicle was found to be very vascular All blood vessels were ligated and the skin closed without drainage The postoperative

course was uneventful and the patient was discharged Nov 3, with the wound healed

The pathological report stated that the tumor



weighed 7 kilos The diagnosis on the microscopic section was "Lipoma with fibrosis and elephantiasis of the skin" The specimen has been placed in the Warren Anatomical Museum

\*For record and address of author see This Week's Issue page 920

dition of obstruction there is always a high non-protein nitrogen, a loss of chlorides, and hypoglycemia. With these conditions one must give salt solution and glucose before and after jejunostomy and until the blood chemistry has approached normal.

I want to mention one other use of jejunostomy for those who are interested in stomach surgery. In extensive stomach operations where resections were called for and where food could not be given by mouth for four or five days, I have recently been doing jejunostomy in addition to the stomach operation. Making use of the jejunostomy opening has made it possible to introduce nourishment at a much earlier time than would be otherwise possible.

DR C C LUND, Boston. It is very kind of you to allow me to speak, and I want to ask one question of Dr Clute on the question of peritonitis—some of the patients dying of peritonitis apparently die largely of dilatation of the stomach. Now, of course, a jejunostomy will probably prevent that. However, when I was a resident on Dr Richardson's service we used an in-lying stomach tube with great success in many cases. Of course, it stops the vomiting at once, and I wonder whether it wouldn't accomplish as much as the jejunostomy. I understand the use of such a tube passed through the nose has become a routine in the Children's Hospital in Boston with splendid results in cases of peritonitis. I haven't had cases of that kind and haven't had the opportunity of trying it in children, but if it works in children I think it might work in adults.

DR H M CLUTE, Boston (closing). I don't think we can prove certainly from our experience that enterostomy saves patients with peritonitis. As I said before, it is extremely difficult to analyze the results. So much is based on one's impressions. You do an enterostomy, the

patient recovers and then you compare that fact of recovery with the mental idea you had beforehand that recovery was impossible.

I quite agree with Dr Cochrane and Dr Walker that in many cases of peritonitis jejunostomy won't be a bit of use and I don't anticipate that it will save every patient. You can only try it, but I believe firmly from what I have seen that some of these patients on whom we did jejunostomy and enterostomy who by all the rules of previous experience should have died recovered with the jejunostomy. If only a few out a hundred do that, it is worth while because I don't believe we have shortened the period of life of the fatal cases by doing the jejunostomy.

I have been interested in what Dr Cochrane and Dr Walker said about hypertonic salt solution. Dr Cochrane told me they used 250 cc of five per cent salt solution intravenously and got better results from that than from normal salt solution. We haven't tried that but have tried using normal salt solution in large amounts. Doubtless it would be of advantage to use some hypertonic salt solution but we feel there is much value in the larger amounts of fluid given when normal salt solution is used.

We have had no experience with the in-lying duodenal tube. We have tried passing a stomach tube through the nose, two tubes, one for irrigation and one for drainage but we haven't had much success and doubtless it may have been due to our inability to keep the tube down properly. I think that in theory it is reasonable and doubtless it should be tried more frequently.

I can't say anything more about peritonitis than that if I find a patient has peritonitis, I shall do a high jejunostomy in the belief that I will do no harm and with the hope that the removal of the toxic products of obstruction from the upper bowel will be the deciding factor in the patient's recovery.

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# Case Records of the Massachusetts General Hospital

ANTE MORTEM AND POST MORTEM RECORDS AS USED IN  
WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY R. C. CABOT, M.D.

F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 14171

FATAL CHOREA

MEDICAL DEPARTMENT

A sixteen-year-old schoolgirl entered March 13

Five weeks before admission she had a streptococcus sore throat. She had been ailing since that time. Three weeks before admission she had "rheumatism" in her feet, ankles, hip and wrist. March 5 her face began to twitch. March 8 she stopped school. The following day she talked incoherently. March 10 she began to throw her head from side to side. The night of March 11 she was found in her night clothes crouching over the register talking to herself about being chilly. The bed was pulled to pieces and the room torn up generally. The day before admission she began to throw herself about and was unable to talk at all. She had a wild night in spite of chloral. She had not slept for five or six nights.

She had a similar attack at twelve years.

Clinical examination showed a well nourished girl showing marked incoordinate movements of the entire body, requiring forcible restraint to keep her in bed. She did not speak when questioned. Cheeks and mucous membranes flushed. All prominences and convex surfaces of the body showed reddening in the form of discrete and confluent papules, not decolorizing on pressure. Skin dry and harsh. Apex impulse of the heart felt in the fifth space 8 centimeters from midsternum. Action rapid, regular. Sounds of fair quality. No murmurs. Pulmonic second sound accentuated at the base. Lungs normal. Abdomen held rigid, otherwise normal. No edema. Pupils not examined. Knee-jerks, abdominal reflexes and reflexes at wrist and elbow not obtained. Plantar reflexes normal. No Kernig. Neck not stiff.

Amount of urine not recorded, specific gravity 1.022, slightly alkaline at both of two examinations, cloudy at one, a very slight trace to the slightest possible trace of albumin at both, acetone at one. Blood 19,000 to 14,000 leukocytes, polymorphonuclear leukocytosis, hemoglobin 85 per cent.

The patient was very violent. Her movements were only partly controlled by chloral and occasional doses of morphia. March 18 a short

rough high pitched systolic murmur appeared at the apex.

March 19 a lumbar puncture was done and 15 cubic centimeters of fluid withdrawn, part of it very bloody, part nearly clear. It reduced Fehling's solution slightly. Sediment from the clearer tube was mostly blood corpuscles. Of 100 cells 80 per cent were polymorphonuclears, 20 per cent, mononuclears. The number of these cells seemed to be no more than might be expected with the amount of blood present. A culture of the fluid showed no growth.

Temperature 99.9° to 103.7°, with a terminal rise to 108°. Pulse 108 to 160. Respirations 15 to 28.

After the lumbar puncture the temperature rose steadily to 108°. The patient became weaker, the movements subsiding only as her strength failed. Strophanthin was given with no response. A double parotitis developed. The breathing became very shallow. The morning of March 20 the patient died.

## DISCUSSION

BY RICHARD C. CABOT, M.D.

## NOTES ON THE HISTORY

I remember this patient well. She was in my service seventeen years ago. Of course the diagnosis is perfectly obvious—chorea—and it is very tragic when we see a case as terrible as this. When one has been fishing and gets a fish it flaps around in the bottom of the boat. She flapped around like that, and only tremendous doses of drugs had any effect. She was terribly violent.

## NOTES ON THE PHYSICAL EXAMINATION

Of course we were watching the heart, knowing there must be something there in such a case as this, as there practically always is. For five days we undoubtedly were looking as often as we could under the difficulties that one can imagine in examining a patient who was in such motion.

I do not know why we did that lumbar puncture. I do not see to-day any sufficient reason for it. The case does not resemble meningitis or any other cerebral disease that could involve the meninges. Part of the fluid was bloody, undoubtedly because we got some blood mixed in with the tap. We got no information. We had a sediment showing the blood introduced during the tap and no evidence of a meningitis. The negative culture was of some value.

We do not always realize the fevers of acute chorea, although in this case, if I remember rightly, there were some other reasons besides the chorea.

## DIFFERENTIAL DIAGNOSIS

Remembering the case as clearly as I do during life, I do not think any diagnosis was or should have been seriously considered except

the so-called chorea major, the severest form of chorea. We have had three fatal cases of this disease in this hospital to my knowledge during thirty years. Two of them, as I remember, showed at necropsy something more besides the chorea. Whether this is one of them I cannot remember.

In chorea the lesions in the heart at necropsy are almost constant, and they are usually of fairly uniform type,—little spots of soft reddish material as big as the end of a pin arranged in rows along the edge of a valve usually the mitral, never, so far as I know, large vegetations and never any chronic or ulcerative process unless there has been something more besides chorea. That is, that endocarditis as I remember it, seems to me different from the average endocarditis of rheumatic heart disease or of bacterial endocarditis.

Two earlier English observers Ponsonby and Paine, who wrote a good deal on rheumatic infections described brain changes in chorea. So far as I know those have not been backed up by later observations. I do not believe there were any found here. There must be changes in the brain, and why we do not find them I do not know. The symptoms are all brain symptoms. This is strikingly evident in hemichorea, one half of the body perfectly quiet and the other half, including the face, twitching. That could not be anything but a brain lesion.

Another point not always referred to is the mental changes in chorea, which get covered up because we suppose that the patient's queer sounds and queer remarks are due to the mechanical disturbance of speech. But there are also definite mental changes, as one would expect in a brain disease such as chorea certainly is.

What is the relation of chorea to acute articular rheumatism? I am confident that they are the same disease with different manifestations. Just as we can have tuberculosis either in the joints or in the meninges, so we can have the organism of rheumatism, never yet discovered, either in the joints or the brain of such patients as we are studying today. One gets every possible sequence and combination of rheumatism and chorea: one sees first rheumatism and then chorea, one sees first chorea and then rheumatism, one sees the two at once.

The hyperpyrexia here is of some interest. The hyperpyrexia of rheumatism is referred to in all the classical accounts of acute articular rheumatism. Here it followed a lumbar puncture which may have had something to do with producing it. But my guess is that the lumbar puncture did not produce it. I believe that the asepsis even at that period was tolerably good. It is not so easy to introduce sepsis into the cord or it would happen oftener. So that I doubt whether anything will be found in the cord, if it was examined, to account for that temperature of 108°. I guess it is a hyper-

pyrexia of chorea parallel to the hyperpyrexia of acute rheumatism.

I do not know anything about the finding of the Aschoff bodies. Do you find those in chorea, Dr. Mallory?

DR. TRACY B. MALLORY: I think we probably find them in the heart. I do not know of any reports of them in the brain.

DR. CABOT: If they do occur in the heart there is no reason why we should not find them here. I should say the post-mortem ought to show small vegetations on the mitral valve possibly on other valves and nothing else that we can predict.

A PHYSICIAN: Is there any significance in the parotitis?

DR. CABOT: I do not know how to say anything about that. I do not remember it in chorea cases before. But any patient who is gravely sick is apt to develop a parotitis owing to the spread of mouth organisms up Steno's duct. As we do not know the origin of parotitis we shall not be able to find out whether this is a choreic parotitis or some other kind, I suppose.

#### CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Chorea major  
Acute endocarditis  
Exhaustion.

#### DR. RICHARD C. CABOT'S DIAGNOSIS

Chorea major  
Acute endocarditis  
Parotitis

#### ANATOMIC DIAGNOSES

##### 1. Primary fatal lesions

(Acute chorea)  
Verrucose endocarditis of the aortic and mitral valves

##### 2. Secondary or terminal lesions

Hemorrhagic areas of the lungs  
Slight bronchopneumonia  
Fatty metamorphosis of the liver  
Slight cystitis  
Parotitis

DR. MALLORY: The necropsy findings were not extensive, as the head and cord were not examined. The heart showed, as predicted, minute vegetations on the mitral and also a few on the aortic valve. There was no deformity of any of the valves. The lungs showed a very slight acute bronchopneumonia, and also numerous petechial hemorrhages that could not be attributed to a pneumonic process. The kidneys showed a slight degree of tubular degeneration but no glomerulonephritis.

Bacterial cultures were made of heart's blood, both aerobic and anaerobic, and no organisms were grown.

DR CABOT Was the brain examined?

DR MALLORY No

It is interesting to hear Dr Cabot mention again Poynton and Paine, because the present trend of work on rheumatic fever seems to be swinging back decidedly towards the point of view of some of the early workers. There seems to be no question that in a very considerable proportion of cases of rheumatic fever it is possible during life or post mortem to grow a streptococcus from the blood stream. The figures from various laboratories differ a great deal, but there are a number of laboratories in which fifty per cent of cases of severe rheumatic fever seem to show this organism. We are still quite a way from proving that that is the cause of rheumatic fever, but some of the recent work is at least suggestive, particularly that of Small of Philadelphia and Birkhaug of Rochester. They have grown streptococci which produce neither hemolysis nor methemoglobin. Birkhaug has shown that this organism produces a relatively mild exotoxin of about one-fourth the strength of scarlet fever or erysipelas, and that patients with rheumatic histories tend to react with positive skin tests to this toxin, whereas normal controls are generally negative. He found that he himself was a susceptible individual as measured by the skin test, and injected a small quantity of this toxin into one of his joints, thereby producing clinically a very typical attack of acute rheumatism, not only that joint but several other joints swelling, becoming red and very painful, with fever, the condition lasting about four days. Injection of the organism in rabbits produces mitral endocarditis, but only when huge quantities are given. So far the work stands about there, but it does seem possible that we may come back to some of the opinions held by the earlier investigators.

DR CABOT I am very glad to hear your opinion of that work of Dr Small's. I had rather thought that most of the laboratories were not backing that up.

DR MALLORY I am inclined to pin more faith on the others. Birkhaug's work was more carefully controlled and his claims are less sweeping. The organisms have been worked with here in Boston and also a similar organism isolated by Clawson and Bell of Minneapolis. All three of these organisms are apparently serologically closely related. One can also, it is true, recover it from the throats of a very large number of normal persons.

DR CABOT But that is nothing against it, do you think?

DR MALLORY Not at all

#### CASE 14172

### AGE AS A FACTOR IN PROSTATECTOMY

#### UROLOGICAL DEPARTMENT

An American of eighty-two entered through the Emergency Ward November 7 complaining

of urinary frequency, nycturia, and difficulty in starting the stream.

He had had these symptoms three years. The stream had gradually decreased in power. Two years ago all the symptoms increased in severity until he had acute retention, requiring catheterization twice a day for twelve days. Operation was discussed but not done because of his age. He improved, but the symptoms continued, growing slightly more severe. He passed small amounts of urine every half hour. For the past year he had had dizziness, dyspnea and precordial pain on exertion, and orthopnea. He had rare epigastric distress. In the past few days the dizziness had increased until he could not stand for any length of time, and frequency had increased so that he had slept little at night and had had urgency and pain by day, relieved by the passage of even small amounts.

In the Out-Patient Department the day of admission he had a residual of sixteen ounces of cloudy urine. A note from a physician of the hospital staff stated that he had eighteen ounces residual November 6.

A number 18 catheter passed easily. The prostate was large and smooth.

No family history or past history is recorded.

Clinical examination showed a well preserved old man appearing years younger than he was, in no obvious discomfort. Heart enlarged to the left. Sounds of poor quality. Rhythm very irregular, at times absolutely. Rate slow but occasionally increased. A loud harsh blowing systolic murmur throughout the chest, best heard at the apex, transmitted to the aortic area. A loud high pitched rough sound localized to the aortic area. Blood pressure 110/70. The sphygmomanometer shut out many of the sounds at the wrist. Occasional strong beats came through down to 70. An electrocardiogram showed auricular premature beats, at times in runs, rate 90 to 130, marked left axis deviation. Abdomen large, full, pendulous. Bilateral direct inguinal herniae. Hemorrhoidal tabs. Prostate symmetrically enlarged, firm, elastic, not tender. Slight edema of the right ankle. Varicosities of both lower legs. Pupils and knee jerks normal.

Before operation amount of urine 48 to 98 ounces, urine turbid, alkaline, specific gravity 1.019, a slight trace of albumin, occasional red blood corpuscles. Blood not recorded. Wassermann negative. Renal function November 9 appearance time 18 minutes, in two hours 50 per cent, November 16 appearance time 6½ minutes, in two hours 53 per cent. Non-protein nitrogen 35 milligrams.

Before operation temperature normal except for one rise to 100.7° the day before operation, pulse 60 to 100, respirations normal except for one increase to 31 November 12.

X-ray showed the transverse measurements of the heart increased. The heart shadow was prominent in the region of the left ventricle.

The supracardiac shadow was wide, prominent both to the right and to the left in the region of the aortic knob. In the oblique view it was not definitely dilated.

A heart consultant reported "No definite story of angina. Marked left ventricular enlargement, rough aortic systolic murmur and thrill absent aortic second sound blowing apical systolic murmur, plateau pulse. Blood pressure 150/90. Irritable heart with premature beats, not heard today, November 14. In this case I should suggest pre-operative digitalization. He is a fair ether risk. Lung bases clear."

The patient was put upon constant drainage. He remained in the same condition. November 17 operation was done. He was not in poor condition after it. The temperature was flat. The fluid intake however was found very low so that a subpectorial had to be given November 18. That evening the blood pressure fell to 72. He was given intravenous glucose and put on shock blocks. He came back very well and continued to do well until November 21. Then he began to take less fluid and was perhaps mildly delirious at night. He continued to lose strength. November 24 there was some hemorrhage from the wound and the blood pressure was reported as 72 but by the time the house-officer arrived it was 115. November 26 he was worse, flushed, breathing with difficulty and rather drowsy. The lungs showed moist râles. There was edema over the shins. The night of November 26 the temperature was 103.7° the pulse 152 the respirations 32. November 27 he died.

## DISCUSSION

BY EDWARD L. YOUNG, JR. M.D.

At his age eighty-two a man complaining of frequency, difficulty in starting the stream and urination at night means prostatic obstruction in the majority of cases. Occasionally in old men we see such symptoms coming from hypertension and arteriosclerotic nephritis. As a rule stricture will make itself known before this. Another thing of interest is that these symptoms were present for only three years. Symptoms of prostatic obstruction as a rule begin earlier than at seventy-nine. It is a disease which most commonly makes its first appearance in the neighborhood of sixty or sixty-five although owing to the slow progress of the disease the patient may not present himself to a doctor with it for a number of years after that. It always brings up the suspicion of malignancy when the symptoms appear and come to a crisis in a relatively short time. It by no means proves malignancy but it always arouses that suspicion.

Two years ago when eighty he had acute retention. The account of the events following that of course rules out the question of stricture. If he had been having acute retention from stricture he would not get by with that casual announcement that twice a day he required catheterization for twelve days. There is one criti-

cism that I want to bring out in regard to the treatment. When any patient has to be catheterized because of acute retention, in order to have that treatment efficacious it has to occur oftener than twice in twenty-four hours. Either the patient has to be on constant drainage or else the bladder must be emptied at least three and sometimes four to six times a day during the first of the time at least.

Age alone is not a criterion for refusing operation assuming that the condition is a benign adenomatous prostate. Of course it is true that the older the patient the greater is the likelihood that his urinary tract and his cardiovascular system are so damaged that he will not stand operation. But the basis for operation should be the condition particularly of those two systems, taken in connection with that indefinite something which explains the general resistance of the individual as the surgeon sees him.

He refused operation here, and because of that refusal has gone on having more and more trouble. When a man with obstructing prostate reaches the stage of acute retention one of two things ought to be done. Either he must be kept on a catheter life until we know that he is taking care of himself adequately, or else he must be operated on. So that again I think my second criticism is that they let him go on causing himself more and more damage.

Eighteen ounces residual means a good deal of back pressure damage to the kidneys. The fact that it was infected adds still more danger to the kidneys.

50 per cent is a very good renal function for a man who has had as much damage as that. The good renal and non-protein nitrogen tests back each other up.

So far then the heart is the bad feature of the picture. They are doing everything they can to find out the condition of the two main systems to see whether they will stand operation or not.

Operation was done ten days after he came in. I do not know just what they are going to do whether they will do a two-stage suprapubic operation or a one-stage perineal. As a rule I think the routine operation of least risk is a two-stage suprapubic operation. The first stage of the opening of the bladder can be done under local anesthesia with practically no shock to the patient. It results in several things. First, it gives better drainage of the urinary tract. Second, it gives a chance for the suprapubic wound to get stabilized if there is infection so that in the second operation there is no shock or spreading of sepsis in putting the finger into the original incision. He has had drainage all the time. I am assuming that they did a two-stage operation. It is true that a perineal operation done under spinal anesthesia gives a very low mortality. But there is in a perineal operation a greater danger of poor urinary control after operation than in the suprapubic approach.

## X-RAY INTERPRETATION

The heart findings are those of arteriosclerosis

## DR YOUNG'S PRE-OPERATIVE DIAGNOSIS

Obstructing prostate, perhaps malignant

## PRE-OPERATIVE DIAGNOSIS

Obstructing prostate

## OPERATION

Local novocain Preliminary ligation of the vasa was done A median suprapubic incision was then made through the skin, subcutaneous tissue and sheath of the rectus The prevesical fat was identified and the peritoneum reflected A cystotomy opening was made in the usual fashion Exploration with the examining finger disclosed a large intravesical prostate with no apparent abnormality of the bladder wall and no calculi

## FURTHER DISCUSSION

If he could not stand that I feel that there is very little chance of ultimate success A patient who will not stand that operation is in such a condition that his expectancy of life is too slight to be seriously considered anyway He would be pushed out of the picture with almost anything that came up

That whole picture seems to spell failure of the cardiovascular system or the cardiorenal system to carry on

It is often a very hard question to decide in a man of this age whether to keep him on a catheter life or whether he can stand operation I remember one instance when I was assistant to Dr Hugh Cabot in 1914 A patient was refused operation partly because of his age, partly because of his general poor condition He was put on catheter life, and has been on catheter life ever since He is now in his nineties He has said several times that he wishes he had taken the chance of operation Catheter life means very great care for the details of treatment,—catheterization by the clock regardless of the patient's feelings, dependent on the amount of residual, and if necessary an inlying catheter at night A year and a half ago there was a patient on whom it was absolutely impossible to operate He was two weeks in the hospital with a non-protein nitrogen over 100 and a zero red test I told him to go out on catheter life, including an inlying catheter at night, and told him he could come back when he was better I told his wife he would be dead within three months He showed up two months ago with a non-protein nitrogen ranging about 40 He had lived literally according to the directions that I gave him, and things having gone smoothly he did not report back His prostate is now out and he is back at work So that catheter life can be carried out by the average intelligent person and he can live a comfortable existence, although it is never so satisfactory as a successful operation

I do not know what the necropsy findings will show, whether they will show death from cardiac failure

A PHYSICIAN Could it be a low grade bronchopneumonia?

DR YOUNG Perfectly well It has been ten days, and with a certain amount of kidney decompensation and edema at this stage of the game I do not know why there could not be a certain amount of pneumonia

I was talking about age and prostatectomy with one of the men yesterday He told me of a man of ninety-six who had a successful prostatectomy The oldest person I have personally done is eighty-six When the man I talked with was an interne in this hospital during the Spanish War this patient entered because of prostate He was a veteran of the Mexican War in 1847 So that they can be fairly old, assuming that they are good patients to stand the reaction

## CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Benign hypertrophy of the prostate  
Myocarditis

## DR EDWARD L YOUNG'S DIAGNOSIS

Obstructing prostate

## ANATOMIC DIAGNOSES

## 1 Primary fatal lesion

Hyperplasia of the prostate

## 2 Secondary or terminal lesions

Pulmonary embolism

Chronic cystitis

Chronic pyelonephritis

Bronchopneumonia

Arteriosclerosis

Arteriosclerotic heart disease—aortic stenosis

Hypertrophy of the heart

DR TRACY B MALLORY The primary cause of death was, of course, hypertrophy of the prostate Both lateral lobes were greatly enlarged, each measuring 4 centimeters in diameter The middle lobe was also enlarged and pedunculated, so as to form a ball valve in the orifice of the urethra The bladder was dilated, hypertrophied, and showed numerous small diverticula The ureters, particularly the left, were dilated, and the pelvis of the left kidney was much increased in size Numerous small abscesses containing colon bacilli were present in the left kidney The right kidney was negative except for a slight degree of arteriosclerosis

His failure to withstand the operation probably rests with the condition of his heart This was much hypertrophied, weighing 555 grams, with a preponderant hypertrophy of the left ventricle There was a very marked degree of aortic stenosis, confirming the physical signs described by the cardiac consultant It was of a pure sclerotic type without evidence of rheumatic involvement

A slight bronchopneumonia was present in the lower lobe of the right lung

The immediate cause of death was a pulmonary embolus which arose from a thrombosis of the right femoral vein just below the inguinal ligament

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## THE ONE HUNDRED AND FORTY- SEVENTH ANNIVERSARY EXERCISES OF THE MASSACHUSETTS MEDICAL SOCIETY

The Society accepted the hospitality of The Worcester County Medical Society and the Worcester Chamber of Commerce and held its Annual Meeting in the Bancroft Hotel and Worcester Chamber of Commerce. The previous Annual Meeting held in Worcester was in 1851.

The weather was not propitious, both days being rainy, but with the exception of the opportunities to visit the city at large and enjoy golf nothing interfered with the regular program although it is probable that a considerable number of fellows were kept from attendance by the unpleasant conditions.

The Section Meetings were very well attended, the largest numbers being attracted to the Section on Surgery although there was sustained interest in all of the other exercises and the accommodations were none too ample for the audience. It was the general impression that

the selection of the subjects which were discussed reflected great credit on the officers of the sections. The discussions following the leading papers brought out all possible amplifications of coordinate problems. The management of the meetings was excellent and there was little loss of time. The audience in each section paid close attention to all that was said.

The registration showed six hundred and one doctors and seventeen guests which is a creditable number considering the weather.

One hundred and ninety-eight participated in the banquet which was served immediately after the conclusion of the Annual Oration by Dr. Walter B. Cannon. This oration was scientific with certain practical applications of interest to practitioners and appears in this issue.

The speaking program was well arranged, the addresses being both entertaining and instructive.

The Council Meeting was well attended and consumed more time than any previous meeting by this body, lasting until after four o'clock with only a short intermission for luncheon.

Many of the subjects provoked animated discussions and several amendments to motions were made before final decisions were reached.

The amended code of by-laws was adopted as submitted by the Committee and endorsed by the Society the next day. This document should be carefully kept for reference for there are several important changes.

The adoption of the minority report submitted by one member of the Committee on Insurance demonstrated the renewed approval of the policy of the Fidelity and Casualty Company.

Although several reports of Committees were subjects of animated debates the President kept the members strictly to the matters on hand and no unnecessary time was devoted to irrelevant subjects.

So much important business was transacted that it is the duty of all who feel any responsibility in the functions of the Society to read the reports of the proceedings which are being prepared by the Secretary and which will be published as soon as possible.

The list of officers elected appear on page II of this issue.

Taken all in all this anniversary meeting can be regarded as one of the most instructive and interesting in the history of the Society. Credit was given to the committees in charge of details by appropriate votes.

## THE ANNUAL MIGRATION

THE camp and cottage season is descending once again upon the city dweller, and with it, as usual, certain health hazards are entailed which his physician should warn him against. Established cottage sites and camp locations frequently fail to have adequate sanitary conven-

ences and unimpeachable water supplies, and as always the milk question, particularly when young children are in the family, may not receive sufficient consideration. It is a common belief that, since cows are found most numerous in the country, country milk must on that account be preferable to city milk. It is also a fact that in this present day typhoid fever is rather a disease of the country than of the city, and despite the fact that our neighbor farmer may be an upright citizen and a steady churchgoer his cows may not share his religious beliefs to the extent of drinking only from controlled water supplies or allowing themselves to be milked only by healthy milkers.

As an unofficial health officer the family physician should instruct his patients to drink only pasteurized milk, and if adequately pasteurized milk is unobtainable, it should be pasteurized or boiled in the home. Sources of drinking water need investigation, and if there is any question whatsoever of the purity of the supply it should be state-tested. Pending a favorable report, or if such a report cannot be secured, the drinking water should be boiled.

For all travelers—and in these days of the ubiquitous motor cars traveling is an almost universal way of vacationing, frequently employing roadside camping—certain immunizing procedures should be carried out, vaccination against smallpox, vaccination against typhoid fever and toxin-antitoxin immunization to diphtheria. It must be remembered that diphtheria immunity may take as long as six months to develop, and a last minute inoculation is of no value.

Smallpox and typhoid fever are slowly on the increase, we are becoming careless in our contacts, and our contacts with all manner of people from all sorts of reactions are rapidly increasing, for never has the general movement of people been so great as in this restless age. The open road is appealing, and close to the bosom of nature is the ideal environment for this vacation, but remember that most places are now visited by man and man too often leaves pollution in his wake.

### IS ALUMINUM A DANGER TO HEALTH?

WE have been asked for an opinion with respect to the effect on health of the use of aluminum cooking utensils.

It has been claimed by a dentist in Ohio that cancer is caused by eating foods prepared in aluminum utensils.

The question was submitted to Dr. George H. Bigelow, Commissioner of the State Department of Public Health and he in turn referred it to Lawrence T. Farhall, Assistant Professor of Physiology of the School of Public Health of Harvard University. He reports that investigations in the laboratory of the Lancet in 1913 later confirmed by Doctors John Gaister and

Andrew Allison at Glasgow University warranted the conclusion that "the use is not attended with any risk to health of the consumers of food cooked therein" provided that "ordinary precautions" are observed.

This last qualifying phrase leaves the matter open to doubt because the average cook may not know the necessary precautions, but it is generally conceded that the use of strong acids or alkalis in aluminum utensils had better be avoided.

### THIS WEEK'S ISSUE

CONTAINS articles by the following named authors

CANNON, W. B. A. M., S. D., LL. D. (Hon.), M. D. Harvard, 1900. George Higginson Professor of Physiology, Harvard Medical School, since 1906. His subject is "The Mechanism of Emotional Disturbance of Bodily Functions." Page 877. Address: Harvard Medical School, Boston.

LEVINE, SAMUEL A. A. B., M. D. Harvard, 1914. Instructor in Medicine, Harvard, Associate in Medicine, Peter Bent Brigham Hospital. His subject is "Some Unproved Impressions Concerning the Subject of Heart Disease." Page 885. Address: 270 Commonwealth Avenue, Boston.

SMYTH, D. CAMPBELL. A. B., M. D. Harvard, 1909. Associate Laryngologist, Massachusetts General Hospital, Bronchoscopist, Thoracic Clinic, Massachusetts General Hospital. His subject is "The Fluoroscopic Removal of Metallic Foreign Bodies in the Bronchi." Page 887. Address: 375 Commonwealth Avenue, Boston.

WHITE, WM. CHARLES. M. B., M. D. Toronto Medical School, 1901. In charge Tuberculosis Research, Hygienic Laboratory, Washington, D. C., Chairman, Committee on Medical Research, National Tuberculosis Association, Director, National Tuberculosis Association, Vice Chairman, 1927-1928, Div. Med. Science, National Research Council, Chairman, 1928-1929, Div. Med. Sciences, National Research Council, Chief Bur. Tuberculosis, Am. Red Cross (1917-1918) in France, later in Italy. His subject is "The Future Responsibility of Research in Tuberculosis." Page 905. Address: 2334 19th Street, Washington, D. C.

CLUTE, HOWARD M. B. S., M. D. Dartmouth, 1914. F. A. C. S. Assistant Surgeon, New England Deaconess Hospital and the New England Baptist Hospital. His subject is "Enterostomy in Obstruction and Peritonitis." Page 908. Address: 605 Commonwealth Avenue, Boston.

BARR, JOSEPH S. S. B., M. D., Harvard, 1926. House Officer, Huntington Memorial Hospital 1924-1925, Surgical House Officer, Peter Bent

Brigham Hospital, 1926-1927 Orthopedic House Officer Children's Hospital, 1928 His subject is "Fibro-Lipoma, Report of a Case" Page 913 Address N E Peabody Home for Crippled Children, Oak Hill, Newton Centre, Mass

## BOSTON MEDICAL LIBRARY

### SEROLOGY

THE modern uses of sera in the diagnosis and treatment of disease, like many another treatment with which we are familiar harks back a long way for the inspiration which has resulted in present day enthusiasm for their employment. At the period when the Alexandrian School of Medicine was the conspicuous center of medical education certain Arabian physicians were experimenting by feeding ducks which had been slowly immunized by the ingestion of materials ordinarily poisonous to them, to human beings that they themselves might be rendered immune against these same toxic substances. Some will doubtless recall the enthusiasm with which Sir Almroth Wright's investigations were received not so many years ago now, and how some were led to hope that the promise held out by the "opsonic index" was soon to revolutionize not only treatment but the diagnosis of many obscure conditions. Indeed it is perhaps strange that more thought had not been given this subject in view of the fact that it was long ago abundantly well known that spontaneous recovery uninfluenced by any treatment is constantly taking place and it would seem but natural to suppose that antidotes were being supplied from within the body. With such knowledge as was possessed, for several hundred years of the circulation and even certain of the properties of the cytologic elements of the blood it would seem that the idea of the Arabian physicians should not have been allowed to lie dormant so long. On the other hand when one dips into the literature pertaining to this subject as viewed by the modern bio chemist, he finds himself over his depth before he has gone any distance from the shore. He must learn to think in terms of agglutination, complement fixation, precipitins, antigens and a maze of terminology, which leaves him either hopelessly despondent as to any immediate future for practical serum therapy or wildly enthusiastic to engage in the task of discovering the magic key to these most interesting physiologic problems.

How complicated the interrelation of physiologic processes is we can glimpse now and then in ways which are so striking that we may only stand aghast at the complexity of the problems to be solved before any clear preception of what is going on within us may be had. We regard hate as a most undesirable quality in man's character and yet there was a time in mankind's history when it doubtless played an important rôle through its power to preserve through the

survival of the fittest, those physical qualities best designed to advance the human species along the road to its ultimate goal. It did this by playing upon certain physiologic stops about which we have only comparatively recently known anything viz the ductless glands. Hate and its confrère anger, by stimulating the adrenals poured into the circulation that which enabled primitive man to overcome odds that would have been overwhelming to him had he not been possessed of this today, undesirable quality. Under such stimulus we now know man can exert many times the energy he is capable of without such influence. What this doubtless meant to primitive man in the sudden exigencies of his wild life may be easily imagined. The individual who had this quality in its most unbridled state was destined to be the victor in his many conflicts. Among the higher dare we say spiritual attributes of human nature at the dawn of human history hate and anger occupied an important position which happily is being surrendered to ones more useful to the present phase of man's evolution. It is however such examples as this that serve to indicate the complexity of the problems that the student of physiologic chemistry must perforce solve. The pathway of any major physiologic process fundamental to life is one continuous series of interrelated events each one of which is preparing the way for the next higher step, all of which must be taken in an absolutely orderly fashion and with an immediacy which is unthinkable as witness the extraordinary rapidity with which the adrenalin reaction is brought about under the excitation of anger. Indeed upon this very immediacy alone does its value to the organism depend. How far we are from the knowledge of these matters which will put us in possession of the means of influencing these processes we cannot know.

It is obvious that the lesson we should learn is that ill-advised experimentation, while not perhaps dangerous is unscientific and often impracticable and that the sane thing to do is to encourage the investigator and discourage all attempts to exploit undetermined physiologic reactions as panaceas in the way of treatment.

## MISCELLANY

### TUBERCULOSIS ABSTRACTS

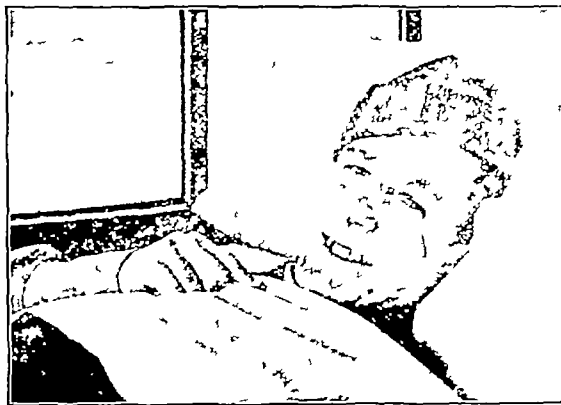
The quest for a cure for consumption is probably as old as history. Koch raised hopes of finding a specific cure in tuberculin the concentrated media of broth cultures of tubercle bacilli. His failure has since been followed by numerous others. In the files of the National Tuberculosis Association there are today records of 680 cures some that give pause to thought some ingenious but most of them ridiculous. Meantime rest fresh air and good food have been established as the tripod on which the treatment of tuberculosis depends. Latterly rest has been so unanimously emphasized by clinicians



who specialize in tuberculosis that it might be regarded as the pillar of successful treatment, while fresh air, good food, artificial pneumothorax and other therapeutic devices might be considered as supplementary supports

#### REST IS RELIEF FROM STRAIN

Rest may mean the sloth of the indolent or the relief from tension that follows change of occupation, says Allen K. Krause. Therapeutically however, rest represents *relief from strain*. Treatment must aim to limit and confine the activities of tuberculous foci and to reduce to zero or a minimum the absorption of harmful focal products. At any time, undue stress may stir quiescent foci into renewed activity. It is axiomatic that uncontrolled movement of a diseased or injured part will promote the spread of the disease and delay recovery. To



Of all the countless remedies proposed rest alone has stood the test of time.—Gerald B. Webb

stop the progress of tuberculous foci is to cure tuberculosis.

Fever, fatigue, loss of appetite and other constitutional symptoms of tuberculosis are manifestations of intoxication resulting from absorption of focal substances. The rate and capacity of this absorption depend on the circulatory and respiratory activities of the body. Rest brings about a diminution of physiological demands and reduces the amount of focal absorption.

Rest for the sick man is a better 'tonic' than exercise. As a result of prolonged rest, the appetite returns, the fever falls and a sense of well-being sets in, while depleted reserves are built up thus assisting in the healing of foci. Rest is a potent medicine to be prescribed according to the requirements of each individual case by a physician who understands its use.

The febrile acutely ill cases must have absolute bed rest for at least two weeks after the temperature has returned to normal. After the constitutional symptoms have disappeared the patient must still be kept below the fatigue line. The fatigue line is an individual affair registered only in the patient's own consciousness. The duty of the physician is to explain to the patient why relief from strain is important. But there can be no set formula for the individual patient; he must rely on his own intelligence and behavior. Rest should be so engraved on the patient's mind that he will automatically respond with rest to the first symptom of fatigue.

Sanatorium treatment is vastly more satisfactory for the majority of patients since rest and discipline and the means of insuring these are more readily obtainable there. The sanatorium, moreover, teaches and trains the patient how to care for himself—*Rest and Other Things*, Allen K. Krause, Williams and Wilkins Company.

#### FOOD REQUIREMENTS AND FRESH AIR

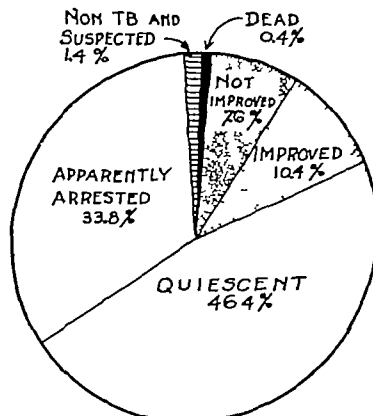
Good nutrition is important, but "stuffing" the patient, as formerly practiced, is a mistake. Over eating is like clogging an engine with unburnt carbon by using too much fuel. Sometimes, the appetite must be cajoled. Three good meals a day, two or three glasses of milk (with or between meals), one or two eggs a day, are often sufficient to add enough to the patient's weight to bring him the gain wished for. A good general rule is that the least amount of food that will enable any patient who is underweight to gain up to and slightly beyond the normal weight is the optimum diet for that patient.

Fresh air as a "cure" for tuberculosis has probably been overemphasized by the laity. It is, however, an essential aid to recovery. Outdoor air is a mild and beneficial stimulant. Sleeping out of doors does not necessarily hasten recovery, provided eight to ten hours a day are spent in the open air and the night passed in a well-ventilated room. Mere dryness of the air is of little avail. Temperature, humidity and air movement determine the quality of indoor ventilation.—*Rules for Recovery from Tuberculosis*, Laurason Broton, Lea & Febiger.

#### DISPOSITION OF PATIENTS

Patients may be divided into three groups as far as treatment is concerned.

1. Suspects, cases under observation and those in which the diagnosis is not definite can be treated



Condition on discharge of 222 patients who remained over 90 days (average 229 days) at Trudeau Sanatorium 1925-26—Annual (1926) Medical Report of the Trudeau Sanatorium

at home or fall into groups (2) or (3). The patient is on trial and more radical measures, such as going to a sanatorium, may be and very likely will be, necessary. In a few cases of this group sanatorium or hospital treatment, if it can be obtained at once, is of great value educationally and otherwise and entirely justified in instances where adequate home treatment is not possible in order to clear up a diagnosis.

2. Cases in which the diagnosis is definite and in which the disease is progressive with or without

a positive sputum, should be sent to a sanatorium or hospital at once and should remain as long as the physician considers it necessary. This is the ideal to be sought for in the great majority of cases. Home treatment may be substituted (a) when there are no children in the family who might be exposed to the disease in the open form (b) when the intelligence of the patient or his family is such that adequate carrying out of details is assured (c) when good nursing and medical service is available and (d) when there are facilities for proper outdoor treatment.

3. Arrested apparently arrested and quiescent cases need close medical and nursing supervision if the good done at a sanatorium is to be permanent. Home treatment may be satisfactory for the majority of these cases. Frequent visits to the home by the nurse and monthly consultations should be required. The amount of work done and the choice of employment are to be decided by the physician. The patient should know that it may become necessary at any time for him to return to the sanatorium when indications of an impending breakdown occur.—*Diagnostic Standards Pulmonary and Glandular Tuberculosis of the National Tuberculosis Association Seventh Edition November 1926*

#### CLIMATE AND ALTITUDE

There is no specific for the cure of tuberculosis. Climate is not a specific. Altitude is not a specific.

No physician therefore is justified in advising a change of climate unless he knows that the patient's financial status will enable him to command the essentials. To put it categorically if a little arbitrarily proper medical supervision sanatorium regime either in a sanatorium or in the home reasonable contentment of mind and intelligent co-operation count ninety or ninety-five per cent of effective therapeutics. Climate and change of environment count five or at the utmost ten per cent. Why therefore sacrifice the ninety or ninety-five per cent. for a five or ten per cent. in those cases who can not command the one hundred per cent? On the other hand if the patient can afford to go to a first class sanatorium or secure the services of a good phthisiologist in a more salubrious climate and will be reasonably contented away from home by all means he should be urged to avail himself of the full one hundred per cent. of these efficacious measures.—*Louis C. Boissiniere Journal of the Outdoor Life February 1928*

#### A CIRCULAR OF INFORMATION

##### CLINICAL CONGRESS OF THE AMERICAN COLLEGE OF SURGEONS

The surgeons of Boston are planning a highly attractive program of clinics and demonstrations for the eighteenth annual Clinical Congress in that city October 8th to 12th. All branches of surgery will be represented therein providing a complete showing of the clinical activities of that great medical center. Clinics will begin at 2 o'clock on Monday afternoon and continue throughout the mornings and afternoons of the following days.

Among the distinguished visitors from abroad who will attend this year's Congress and present papers are Professor Vittorio Putti, Professor of Orthopedic Surgery at the University of Bologna, Italy and Director of the Rizzoli Institute. Sir William L.

de Courcy Wheeler of Dublin Past President of the Royal College of Surgeons of Ireland.

The Presidential Meeting on Monday evening will be held in Symphony Hall, as will also the annual Convocation on Friday evening. On the other evenings meetings will be held in the ballroom of the Copley Plaza Hotel. The annual Hospital Conference opens on Monday morning in the ballroom of the Copley Plaza with a program of papers, round table conferences and practical demonstrations dealing with the many problems related to hospital efficiency.

Boston now has ample first-class hotel accommodations for all who wish to attend. In recent years a number of new hotels have been built, including the Statler with 1300 guest rooms. Reduced railway fares from all points in the United States and Canada will be granted for this meeting.

Registration in advance will be necessary as attendance will be limited to a number that can be comfortably accommodated at the clinics. Clinical Congress headquarters will be established at the Statler where the ballroom and foyer and other large rooms on the mezzanine floor have been reserved for our exclusive use. The ballroom at the Copley Plaza will be utilized for the evening meetings and other large gatherings.

FRANKLIN H. MARTIN *Director-General*

#### CAUSE OF DENTAL CARIES

Recently according to the United States Bureau of Education an experiment was made in a London hospital on the effect of different diets on the teeth. One group of children of about 7 years of age was given daily one and a half to two pints of milk, egg one and a half ounces of sugar, butter, rice, meat, fruit, bread, vegetables and cod liver oil. Another group had only a half to three-quarters of a pint of milk, very little egg, three ounces of sugar, more potato but less of other vegetables, a little oatmeal, more bread but no butter and no cod liver oil. At the end of eight months there was an increase of more than twice as many decayed teeth in the second than in the first group and the extension of caries existing at the beginning was more than two and one-half times as great.

Such an experiment is interesting but it seems a little like taking liberties with other people's teeth.

#### NEW YORK ACADEMY GETS DR. STREETER'S COLLECTION

A collection of medical books containing many of the earliest printed works on the subject, brought together by Dr. E. C. Streeter of Boston over a period of twenty years has been purchased by the New York Academy of Medicine from Dr. A. S. W. Rosenbach, a recent report states.

The purchase price was \$185,000 of which \$85,000 was contributed by the Rockefeller Foundation.

When our own Academy of Medicine becomes a reality it is to be hoped that New York's gains will no longer be our losses.

#### RECENT DEATHS

LOTHROP—DR. HOWARD AUGUSTUS LOTHPROF, surgeon, died at the Charlesgate Hospital, Cambridge, of sepsis June 4, 1928, at the age of 63. While removing a dressing he scratched his hand with a safety pin resulting in infection of his right arm.

It was necessary to amputate the arm, but he was so profoundly septic that he did not survive.

Dr Lothrop was born in Sharon on December 31, 1864, the son of Horace A. and Sarah Gorham (Swain) Lothrop. He came to Boston and attended the Boston Latin School. In 1887 he received his A B degree at Harvard *magna cum laude*, and he was graduated from the Harvard Medical School in 1891, taking also the degree of A M at that time. He studied also in Europe for two years. He served as a house officer at the Massachusetts General Hospital and had practised in Boston. He became associated with the Boston City Hospital as a visiting surgeon soon after graduation. He was instructor in surgery at Harvard Medical School 1903-1912, assistant professor of surgery 1912-1922 and acting professor of clinical surgery 1922-1923.

He was a member of the Massachusetts Medical Society, American Medical Association, the American Surgical Association, Boston Society of Medical Sciences, Boston Surgical Club and the Boston Society of Medical Improvement. He was a Fellow of the College of Surgeons. He belonged to the St Botolph, the Harvard and University clubs.

Dr Lothrop, who was unmarried, made his home with his mother at 101 Beacon street, besides whom his survivors include two brothers, John Howland Lothrop of Portland Ore, and Dr Oliver A Lothrop of Boston, as well as three sisters.

**COURTNEY**—DR JOSEPH WILLIAM COURTNEY, neurologist, died at his home in Boston June 6, 1928, after a short illness with pneumonia, aged 60. He was a graduate of Harvard College in the class of 1890 and of Harvard Medical School in 1893.

From 1893-1909 he was a member of the staff of the Boston City Hospital and for some years physician in-chief of the department of nervous diseases at the Carney Hospital and the Boston City Hospital. He was a member of the American Neurological Association, Massachusetts Medical Society, and the Boston Society of Psychiatry and Neurology. He was also a corresponding member of the Société de Neurologie de Paris.

Dr Courtney was the author of the book "The Conquest of Nerves" and for many years a constant contributor to medical journals. He was a member of Harvard Club and Papyrus and Medical History clubs of Boston and the Authors' Club of London.

He is survived by his widow and three children: Mrs John T J Clunie of 230 Commonwealth Avenue Boston, Paul G Courtney of Weston, and Gerald Courtney of Phoenix Ariz.

## CORRESPONDENCE

### SHALL THE INDIVIDUAL PAY THE COST OF ANTI-RABIES TREATMENT?

18 Dalton Road Belmont, Mass

June 5, 1928

Editor THE NEW ENGLAND JOURNAL OF MEDICINE

The editorial entitled Rabies which appeared in the May 31st issue of the NEW ENGLAND JOURNAL OF MEDICINE contains this sentence: 'If the individual is able to pay obviously he should pay any costs in connection therewith.' The reference is to the cost of the prophylactic treatment and its administration in cases of dog-bite by rabid or possibly rabid animals. The justice of such a procedure is not at all

obvious to me. It appears to me to be obviously unfair to ask the individual bitten to pay the cost of the prophylactic treatment when he is not the owner of the dog.

I am presuming of course that it is admitted that rabies is, among domestic animals, primarily a disease of dogs, that human beings are, in most cases, more valuable than dogs, and that dogs, however useful and likable under certain circumstances, are not, for the most part, a real necessity but rather a minor luxury.

We will suppose that whereas I do not see fit to enjoy this particular luxury my neighbor or anyone in a locality I may have occasion to visit or which is within striking distance for his dog of my locality, does own a dog. The dog develops rabies. Having the several misfortunes in varying degree of having been born, of having parents who chose to dwell in that particular city or town and of having inadvertently failed to don his bite-proof underwear on the day that he happened on the same street with the rabid dog my child is bitten. Because I am able to pay and am fool enough to admit it I am asked to defray the necessary costs that my child may enjoy the experience of from fourteen to twenty-one daily hypodermic injections with all the immediate discomfort and possible more remote sequelae that may go therewith. It is a most naive view of the matter to say the least and the only thing about it which appears to me to be quite obvious is its ludicrousness.

It is possible that there may occasionally be a dog owner who would, under such circumstances, voluntarily offer to defray the cost, but I imagine that such individuals are for the most part living under forced confinement where such luxuries as owning a dog are not permitted. It would also be possible, no doubt to collect the cost through legal procedure under circumstances where all the necessary technicalities had been complied with and I suppose lawyers must live too, but the cost of collection might conceivably exceed the amount to be collected, not to mention the effect of such a procedure upon the gaiety of neighborhoods.

Regardless of the amount involved and the ability of the victim or his family to defray the cost, it would seem only fair to expect and require the owner of the rabid dog to pay for any and all treatment required as the result of injury inflicted by such an animal. Where the owner is unquestionably unable to pay or where such injury is inflicted by a stray animal which has been permitted to lend local color to the community through the laxness of the public officials or public opinion, it would seem equally as obvious to expect the city or town to defray the entire cost of treatment.

Such a gross misplacement of the financial burden, great or small, as referred to not only penalizes the victim but also relieves the owner of a very proper responsibility for the ownership of a dog. The fact that damages can, I believe, be collected legally for such injury, would seem to prove the existence of such responsibility and serve to substantiate the justice of such an attitude. Moreover, in the case of a disease which is practically 100 per cent fatal it should not be necessary to await its clinical recognition in order to be able to obtain the cost of prophylactic treatment, no matter how trivial the initial injury.

Yours very truly

EDWARD A. LANE, M.D.

## INSURANCE FOR PHYSICIANS ENGAGED IN PUBLIC HEALTH WORK

Editor NEW ENGLAND JOURNAL OF MEDICINE

At the suggestion of Dr Safford I am sending you the enclosed correspondence with the request that it be published in the JOURNAL.

Sincerely yours

FRANCIS GEO CURTIS M.D.,  
Secy Comm on Public Health

May 10 1928

George H Crosbie Esq.,  
79 Milk Street Boston Mass  
My dear Mr Crosbie

At a meeting of the Public Health Com of the Mass Medical Society the question arose whether members of the Society engaged in Public Health work are protected by any of the plans for insurance for members of the Society

These men are not engaged in general practice confining their activities entirely to public health

They are of two classes those who actually perform certain medical acts such as vaccination and administration of antitoxin inoculation against certain diseases etc., and those who do not actually perform such duties but order their medical employees to do them These last might be held liable on the theory that the chief is responsible for the acts of his agents

I was requested to ask you if in your opinion these men are covered by any of the insurance plans now in effect and if not, whether some plan could be arranged whereby such men could receive the benefits of insurance

Very truly yours

FRANCIS GEO CURTIS M.D.,  
Secy Comm on Public Health

May 14 1928

Francis G Curtis M.D.,  
Sec., Comm on Public Health  
City Hall West Newton Mass  
Dear Doctor

Answering your letter of the 10th let me state that we already have a number of the Public Health Physicians insured They all take the lower rate that is \$20.00 for a \$10,000/\$30,000 policy unless they specialize in X-ray work or in major surgery in which case they take an increased rate

I am enclosing herewith a sample policy with rate sheet for the various specialties but the major part of these men belong in Group 1 They should all be insured as there is a chance of suit in which the City will not protect them

If there is any further information I can give you please let me know

Yours very truly  
GEO. H. CROSBIE.

## NEWS ITEMS

**HELPLESSNESS OF THE 'PROBLEM-CHILD' CLINIC**—The Vermont Children's Aid Society in its latest annual report testifies to the helplessness of the problem-child clinic recently established in the University of Vermont by the National Committee for Mental Hygiene. A staff conference was held each month in connection with the clinic for the benefit of workers of the society and other organizations.—*Bulletin Children's Bureau*

**A GIFT TO THE MELROSE HOSPITAL**—Mr and Mrs Alfred H. Colby have given one hundred and twenty-five thousand dollars to provide for a new wing for the Melrose Hospital

**DR. BENJAMIN PARVEY VISITS EUROPE**—Dr B Parvey of Charlotte Street Dorchester sailed for Europe on the S S Dresden May 31, 1928 from New York Pier He was given a send-off by 300 friends at the pier His absence will cover a period of eighteen months He will practice and study obstetrics and gynecology at the leading hospitals in Vienna and Berlin His family will join him in June 1929 and after touring the Continent for six months he will return to the States

**REORGANIZATION OF THE MASSACHUSETTS SOCIETY FOR SOCIAL HYGIENE**—The Massachusetts Society for Social Hygiene has been reorganized with Dr Cecil R Drinker Assistant Dean of the Harvard School of Public Health as President, Dr George H. Bigelow Massachusetts Commissioner of Public Health as Honorary Vice-President, and Dr Helen I Doherty McGillicuddy as Executive Secretary

The Society plans

1 To continue educational work in social hygiene and venereal disease

2 To make an intensive investigation and campaign against venereal disease in a single community in the State rather than a diffusion of effort through many of our cities

3 To cooperate with and further the work of the State-aided venereal disease clinics

## NOTICES

**ANNUAL NARCOTIC REGISTRATION RETURNS MUST BE FILED WITH THE COLLECTOR BY JULY 1 OR PENALTY ATTACHES**

The forms to be used in applying for reregistry under the Harrison Narcotic Law as amended for the year beginning July 1 1928 have been distributed If one desires to continue present narcotic registration these forms, properly executed with the proper amount of tax or taxes must be returned to the office of the Collector of Internal Revenue 22 Pearl Street, Boston so that they will reach there on or before July 1 1928 or penalty will attach.

Persons registering in class 1 2 3 or 4 are required to register in class 5 also if they wish to dispense or handle exempt narcotic preparations No additional payment of tax is necessary but care should be taken to see that the class 5 block on the application form is checked

The inventory on Form 713 of narcotics on hand must be prepared under oath or affirmation in duplicate the original of which is to be kept on file by the maker and the duplicate forwarded to the Collector No inventory on this form is required for class 1 and 2 An inventory must be made for class 5 if registry is desired in that class The inventory for class 5 refers only to taxable narcotic drugs which might be set aside for use for manufacturing exempt preparations and does not require the listing of ready-made preparations and remedies classed as exempt narcotic preparations In most instances no taxable narcotic drugs are on hand in class 5 If such is the

case, the inventory used for registration in one of the higher classes may also be used for class 5, provided a notation—'No taxable drugs in class 5'—is placed conspicuously on both the original and duplicate copies of the inventory.

Please read the forms carefully before executing them, so that reregistration may be properly accomplished, and to avoid payment of penalty, return all forms with proper remittance in the form of certified check, postal money order, or cash, not later than July 1, 1928.

If there has been a change in address from that at which registration was made last year please make notation on application, and show date of removal.

In the event that reregistration is not contemplated for any reason the office of the Collector of Internal Revenue should be so advised prior to July 1.

#### UNITED STATES CIVIL SERVICE COMMISSION WASHINGTON D C

May 31 1928

Subject: Need for Internes in Veterans Bureau Hospitals

There is a shortage of eligibles for positions of junior medical officers (internes) in hospitals of the Veterans Bureau throughout the country. Applications for the positions will be received by the Commission until June 30.

Applicants will not be required to report for examination at any place, but will be rated on their education, training, and experience. Senior students will be admitted to the examination under the conditions specified in the announcement.

Service as interne in a Veterans Bureau Hospital offers valuable experience to the recent graduate in medicine. The entrance salaries are named in the announcement. At the end of eighteen months service a salary of \$3,300 a year may be paid. Higher salaried positions are filled through promotion.

Apply to the Commission for detailed information.

Very respectfully,

JOHN T DOYLE, Secretary

### REPORTS AND NOTICES OF MEETINGS

#### THE ANNUAL MEETING OF THE NEW ENGLAND ROENTGEN RAY SOCIETY

At the annual meeting of the New England Roentgen Ray Society held in Worcester on June 6, 1928 Dr F B Lamb of Portland Maine was elected President, Dr A S MacMillan of Boston Vice President, Dr John D Camp Secretary, Treasurer and Dr M C Sosman of Boston a member of the Executive Committee.

The Secretary reported that eight meetings had been held during the year, three at the Boston Medical Library and one each at the University Club, the Massachusetts Eye and Ear Hospital, Children's Hospital, Peter Bent Brigham Hospital, and one in Worcester, Mass. Seven new members were accepted during the year, and one member died, Dr A P Merrill of Pittsfield, Mass. There are one hundred and twenty members at present in the Society.

M C SOSMAN MD

#### UNION HOSPITAL IN FALL RIVER

##### CLINICAL STAFF MEETING

The Regular Monthly Clinical Staff Meeting will be held at the Stevens Clinic on Thursday, June 21 1928, at 8 15 P M. All physicians interested are cordially invited. Refreshments will be served.

M N TENNIS MD, Secretary to Staff

#### THE SOUTH END NEIGHBORHOOD MEDICAL CLUB

The next meeting of the South End Neighborhood Medical Club will be held at the office of the Boston Tuberculosis Association, 554 Columbus Avenue, Boston on Tuesday, June 19, 1928 at 12 noon.

Dr Edwin H Place, Assistant Professor, Tufts Medical School, Professor of Harvard Medical School, and resident physician, City Hospital, will speak on Diagnosis of Contagious Diseases. All physicians are cordially invited.

The usual luncheon will follow.

#### SOCIETY MEETINGS

June 16—Annual Meeting of the Massachusetts Nurses Association. Complete notice appears on page 875.

June 18 20—Meeting of the American Association for the Study of Goltser. See page 875 for complete notice.

June 18 22—Convention of the Catholic Hospital Association. Complete notice appears on page 1597 issue of February 16.

June 19—South End Neighborhood Medical Club. Complete notice elsewhere on this page.

June 21—Union Hospital in Fall River. Detailed notice appears above.

December 3 7—Radiological Society Convention. Detailed notice appears on page 712 issue of May 17.

### BOOK REVIEW

*Statistical Methods for Research Workers* By R A FISHER Sc D, Formerly Fellow of Gonville and Caius College, Cambridge, Chief Statistician Rothamstead Experimental Station. Oliver and Boyd, Edinburgh. Tweeddale Court, London. 33 Paternoster Row. E C 1928.

The author states that the prime object of this book of 270 pages is to put into the hands of research workers and especially of biologists the means of applying statistical tests accurately to numerical data accumulated in their own laboratories or available in the literature.

The book is liberally supplied with the tables which may be useful in making statistical conclusions.

In addition to the consideration of the general purpose of the book, chapters are specifically devoted to the following: Tests of Goodness of Fit, Independence and Homogeneity, Test of Significance of Means, Differences of Means, and Regression Coefficients, The Correlation Coefficient, Intraclass Correlations, and the Analysis of Variance, The Principles of Statistical Estimation.

The author is a master of the latest applications of methods of statistical study. The book has been prepared and edited with great care, but in the presentation of certain matters it would seem that the phraseology might have been better adapted to persons without special mathematical training, whose needs the book is supposed to meet.

# The New England Journal of Medicine

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## NEW ENGLAND SURGICAL SOCIETY

### SARCOMA OF THE UTERUS\*

BY RICHARD H. MILLER, M.D., F.A.C.S., AND HORATIO ROGERS, M.D.†

IT was in 1860 that Virchow called the attention of the medical profession to the occurrence and importance of sarcoma of the uterus. Since that time there have appeared numerous reports both of isolated cases and collected series but an occasional refreshing of our knowledge of this rather unusual condition is not without value.

Of course, most cases of sarcoma of the uterus are discovered during or after an operation for fibroid tumor, and therefore the frequency of occurrence is usually computed in the percentage of cases found in the pathological examination of a series of fibroids. Figures vary, but the majority of observers estimate the number of sarcomata as being from 0.5% to 2.0% of the myomata. Miller, from 9750 cases, reported sarcomata in 1.9%, Noble 1.4% of 2274 cases, Kelly and Cullen 1.2% of 1400 cases, and Deaver and Pfeiffer 1.2% of 345 cases (Maronev<sup>1</sup>). Masson<sup>2</sup>, at the Mayo Clinic, reported 44 sarcomata to 4322 fibroids, or 1%. Vogt<sup>3</sup> found only 0.6% in 1216 cases, and from the literature collected 72,116 cases with sarcoma in 0.4%. On the other hand, Imhauser<sup>4</sup> estimates that the figure is as high as 6%. Reel and Charlton<sup>5</sup>, reporting from the Pathological Department of the Ohio State University in 1923, show a higher figure, finding 11 cases out of 288. In a hitherto unpublished study one of us, in investigating the pathological reports of 5514 fibroid specimens, found 14 cases of sarcoma alone and 30 cases of sarcoma plus myoma—a total of 44, or 0.8%. It must be borne in mind that the reaction of the individual pathologist has a great bearing on his interpretation of a given series, for instance, Warner, in a careful study of 100 consecutive cases, finds two definite sarcomatous and 5 others "very cellular, and well on the border line of this malignant complication." Another pathologist might interpret the figure for sarcomata, in this series, as higher than 2%. However, we can accept 1% as a fairly representative figure from the literature.

The majority of sarcomata are in the fundus—

Read at the Annual Meeting in Manchester, N. H., October 1, 1927.

†For record and address of author see "This Week's Issue" page 955.

about 12% occur in the cervix. Ewing<sup>7</sup> classifies them as

- 1 Circumscribed
- 2 Diffuse or infiltrating
- 3 Polypoid (of body or cervix)
- 4 Extra-uterine, single or multiple myosarcomata
- 5 Secondary sarcoma in myoma

He further describes the "mucosal" type—that which develops in the sub-mucous connective tissue. This type may form pedunculated masses which protrude from the cervix into the vagina, and recur after removal by curettage. Graves<sup>21</sup> says "Where this type of sarcoma springs from the mucosa of the cervix the vagina becomes filled with a mass of grape-like polyps, which eventually protrude through the cervix into the outer world. The tumor under these conditions is commonly called grape-mole or sarcoma botryoides."

Reel and Charlton<sup>5</sup> in 11 cases found 9 occurring in the body and two arising from the submucous stroma—the endometrial type. Vogt<sup>3</sup> found in 30 cases 28 arising from the body and two from the cervix. It may fairly be said that most cases occur in the fundus and are mistaken for myomata.

The question as to whether sarcoma arises from myoma is an interesting and important one. Ewing<sup>7</sup> says that those occurring in the wall of the uterus are myogenic in origin and may or may not be secondary to fibroids. Evans<sup>8</sup> states that the sarcoma may, but usually does not, develop on or in a fibroid—it usually arises from the ordinary normal muscle cells. Warner's<sup>9</sup> 2 cases of sarcoma were in a series of 100 fibroids, while Reel and Charlton<sup>5</sup> found 8.6% of sarcomatous changes in pre-existing fibroids. Vogt's<sup>3</sup> 30 cases of sarcoma are interesting in that only 8 developed on pre-existing myoma—in other words, 73% occurred primarily. The figures of Frankl<sup>6</sup> are as follows:

Total cases of Sarcoma—38

Associated with pre-existing myoma—17

Probably associated with pre-existing myoma—5

Not associated with pre-existing myoma—15

Doubtful—1

The answer to this question, then, is that some sarcomata develop in myomata and some do not, accurate figures are hard to obtain. As Frankl says, there may exist in one uterus (1) myoma and sarcoma independently, (2) myoma invaded by sarcoma, and (3) sarcoma developing in a myoma.

The most commonly mentioned histological types are the spindle-cell, giant-cell, and small-round cell—the last being considered the most malignant. The ordinary microscopic characteristics of the uterine sarcomata, as observed by many authors, are (1) increase in size of cells, (2) shorter and plumper cells with oval or vesicular nuclei, (3) inequality in size and irregularity in shape and arrangement, (4) lack of differentiation, (5) unequal and deep staining of nuclei, (6) large cells with occasional multiple nuclei, (7) mitotic figures, (8) decrease or absence of stroma, and (9) thinness or absence of vessel walls (Evans<sup>8</sup>). Ewing, and Proper and Simpson, accept the giant-cell as evidence of a rather high degree of malignancy, but Evans and Masson do not agree. Evans<sup>8</sup>, in a very valuable piece of work, grouped the sarcomata according to malignancy by counting the mitotic figures in 1 cu mm of tumor. His groups are as follows:

- I 2200—12000 per cu mm
- II 200— 800 “ “ “
- III 0—few

He classed in this way and followed 72 cases, with these observations:

- Group I —13 cases—11 died of recurrence—two living
- Group II —9 who were traced are well
- Group III—all who could be found were well

He considers Group I highly malignant, Group II border line—perhaps a stage of metamorphosis, and Group III premalignant. All are agreed that distant metastases are rare, and the extension is rather local and abdominal, though occasionally, especially in the round cell type, there may be metastases in the lungs.

Sarcoma and carcinoma may occur together in the same uterus, but this combination is rare, a recent case has been reported by Jaffe<sup>10</sup>, and one of sarcoma and adenoma by Froeschmann<sup>11</sup>. Also of academic interest in this connection are the occasional mixed tumors of the uterus. Such have recently been reported by Peilstein<sup>12</sup>, Wiener<sup>13</sup>, and Petersen<sup>14</sup>, and the last named has collected 50 cases from the literature. These tumors are analogous to the teratoid growths of the ovary, and are due to the displacement of embryonal rests along the Wolffian duct, which in the female becomes Gartner's duct. The tumors almost always contain sarcomatous tissue, and often cartilage, smooth muscles, striated muscle, fat, and less often bone and endothelium. There have also been re-

ported 31 cases of lipoma of the uterus<sup>15</sup>, and 43 cases of endothelioma<sup>16</sup>.

The cases of sarcoma present no characteristic signs or symptoms. They may give the picture of myoma, cervical polyp, or unexplained uterine bleeding. Suggestive facts, however, are that they grow much more rapidly than ordinary fibroid tumors, are more invasive, and tend to recur.

As to treatment, radical surgery offers the most chance of successful cure though European authors are enthusiastic about radiation. Beclere<sup>16</sup>, quoting Seitz and Wintz, reports 18 cases, of whom 14 were cured by radiotherapy. Imhauser also advises large doses of X ray. We would recommend that in every hysterectomy for fibroid or unusual tumor, the specimen should be carefully examined at the time of operation, and if any evidence of sarcoma be detected, the dissection should be made more complete, with removal of the cervix.

In regard to the gross appearance, the polypoid type or 'grape sarcoma' should easily be recognized as malignant at operation, as should diffuse sarcoma of the uterine mucosa. The recognition of malignant changes in myomata, however, is difficult on gross examination, and sometimes even on microscopic as has been pointed out above. The gross section of a benign undegenerated myoma has a characteristic appearance and feel. Of the various non malignant forms of degeneration, some should cause no confusion, such as calcareous, hyaline, edematous, myxomatous, cystic, and fatty. It would be easy to mistake for malignancy very rapidly growing myomata, certain appearances of necrosis, or so called red degeneration. However, if the cut section of a myoma presents a soft grayish-pink or yellowish appearance, is friable, and no frozen section is available, it would probably be safer to treat it as malignant until microscopic examination proves it benign.

#### CASES AT THE MASSACHUSETTS GENERAL HOSPITAL

From 1876 to 1926 there have been at the Massachusetts General Hospital 2043 cases of fibroid tumor, most of them being operated on. The figures up to 1897 are not accurate, but are approximately correct—at least enough so for the purposes of this study. In the same period there have been 25 cases of sarcoma—1.2%. The average age of these was 46—the youngest 28 and the oldest 64.

The location of the growth was as follows—

Fundus	20	80%
Cervix	4	16%
Fundus and cervix	1	4%

The tumors were examined by three different pathologists, and the microscopic findings are for this reason a little hard to correlate—they are as follows—

Spindle cell.....	12	48%
Myxo sarcoma.....	2	8%
Round cell.....	2	8%
Round and spindle cell.....	1	4%
Other types.....	8	32%

Of the cases 7, or 28% had local metastases, or extension of the growth, outside the uterus. The parametrial tissues, great omentum, and peritoneum of the small bowel, were the structures involved. None had distant metastases. The reports were difficult of interpretation, but in 9, or 36% there were concomitant fibroids, and it is assumed that the sarcoma developed in these, on the other hand, in 63% there was no definite report of myoma. Mitosis was reported present in but 4 cases. The autopsy protocol of one interesting case is here given —

Autopsy No 2781

#### ANATOMICAL DIAGNOSIS

*Leiomyosarcoma of Uterus with Metastases in Retroperitoneal Tissue and in Peritoneum*  
Anemia  
Slight Hydronephrosis rt.  
Oedema of lower extremities  
Operative wound

(From the Notes)

The tubes and ovaries are not found.

Situated retroperitoneally are 5 large roundish masses of new growth tissue which protrude marked ly into the peritoneal cavity pressing the intestines which skirt over them markedly forward. Tissues necrotic and infiltrated with large amounts of fluid. Retroperitoneal cavity contains beside new growth considerable dirty brownish red fluid. Upper portion of uterus present, walls very thin and cavity rather large. Cervix and vagina not remarkable but posterior wall of the uterus rests over and is closely applied to one of the masses of new growth tissue mentioned which completely fills the pelvic cavity. Uterine wall separates off easily from this mass. Omentum involved in this new growth and in several instances the wall of the small intestine shows smaller and larger pedunculated masses of new growth tissue similar in character to that already described. Microscopic examination sections of tumor in several situations including uterus and intestines show that the tumor tissue consists of large spindle shaped cells with long polar processes arranged parallel to one another in bundles and with only a little connective tissue stroma in places. A few blood vessels traverse the tumor tissue.

The symptoms chiefly complained of were, as above inferred, those which might well have been caused by fibroid tumor or carcinoma. They were —

Bleeding .....	17	68%
Pain .....	13	52%
Abdominal tumor.....	10	40%
Loss of weight.....	3	12%
Mass in vagina.....	2	8%
Trouble with micturition.....	1	4%

No definite attempt was made to follow up these cases, but the end results, as far as obtained, are given below —

Died of the growth.....	5	20%
Died of the operation.....	3	12%
Well 1 yr after operation.....	3	12%
Well 6 mos after operation.....	1	4%

Well 6 yrs after operation.....	1	4%
Not traced.....	12	48%

All the above figures from our cases bear out in a general way the reports from other clinics —that approximately 1% of alleged fibroid tumors will turn out to be sarcomatous, that the malignancy of these varies from very slight to very great, that there are no characteristic symptoms, and finally that every effort should be made, at the time of operation, to detect them, so that as radical an operation as possible may be done.

Our interest in this subject was aroused by a case which was sufficiently extraordinary to warrant brief mention here.

CASE. A woman of 40, white a cook, presented herself for the treatment of varicose veins. The past history was irrelevant, and her only complaint was from the veins. Examination revealed beside the veins a huge rounded smooth abdominal tumor apparently solid extending from the pubes to the ensiform, and larger than a full term pregnancy. The patient had not known of its existence and indeed was skeptical about it. She had no abdominal symptoms and no disturbance of menstruation. The diagnosis of fibroid tumor was made, and operation performed. At the operation the tumor, which filled the whole abdomen and to which the intestines were more or less adherent, was removed without any marked difficulty and without leaving any visible masses of growth. The immediate convalescence after operation was uneventful. The pathological report follows —

The specimen consists of an enormous solid uterine tumor weighing 5730 grams. Both adnexa somewhat distorted can be recognized. On section it is made up of a number of spherical tumors of varying sizes some of which are firm and grayish white while others are soft and show a pure white cut surface. The largest of these is for the most part necrotic and is soft and dull yellow in color. What appears to be the uterine cavity is considerably distorted and shows a smooth inner surface.

Microscopical examination of sections of this larger mass shows an undifferentiated richly cellular sarcoma. The cells are very atypical without any definite arrangement and are generally elongated and of spindle shape. There are scattered areas of necrosis. It is bounded by a thin zone of uterine muscle in which there is no evidence of invasion. Sections of one of the larger nodules show a richly cellular stroma with less atypicality of the cells and some differentiation the cells being arranged in interwoven bundles like a fibromyoma. Other nodules show the typical structure of a fibromyoma. The largest tumor must be regarded as malignant and suggests in its appearance a leiomyosarcoma and the other nodules fibroids of various degrees of cellular richness.

Diagnosis. Leiomyo-sarcoma.

Two months after this operation she began to complain of pain and stiffness in the region of the right hip. Six months after the operation she was admitted to Hospital with a spontaneous fracture of the right hip. At this time there were no palpable abdominal tumors and X-ray of the spine pelvis and shoulder were negative. It was finally decided to explore the site of fracture and a brief report of the operation follows —

Usual lateral incision. Tensor fasciae femoris and gluteus medius muscle separated.



part of the incision there was a small protuberance, the size of a bean, projecting through the capsule of the joint. It was hard, fibrous and glistening, and unquestionably malignant. The capsule was opened and the whole neck found to be infiltrated with disease.

A small amount of the tissue was removed and the pathological report was as follows:

Several small irregular grayish white pieces showing on microscopic examination a tumor composed of irregular spindle cells with long wavy fibrillae arranged in interlacing bundles. Many of them have long nuclei and some are multinuclear. There is considerable variation in the amount of their chromatin. Mitotic figures are numerous. This specimen resembles the one previously removed from the uterus.

The patient died shortly afterwards in a hospital for incurables after developing a distressing cough which was thought to be due to pulmonary metastases, though this was not proved.

Here, then, is a striking and most typical example of a uterine sarcoma of a high degree of malignancy. Had this patient been more intelligent and more observant, she would doubtless have presented herself for early operation, and a radical cure might have been obtained.

#### CONCLUSIONS

1 Twenty-five cases of sarcoma of the uterus are reviewed. They constitute in our series 14% of the number of fibroids.

2 Sarcoma of the uterus presents no pathognomonic signs or symptoms, and is usually mistaken for myoma.

3 It may, but does not necessarily, originate in a pre-existing fibroid.

4 Any rapidly growing fibroid tumor should be suspected of being sarcomatous.

5 At every operation for fibroid tumor of the uterus the specimen should be carefully examined to determine if sarcoma be present, if so, the operation should be made very radical.

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#### DISCUSSION

DR H T HUTCHINS, Boston. Every once in so often someone ought to bring us up to date on the rare things that occur in surgical pathology, and thus Dr Miller has done this afternoon.

He has brought up sarcoma of the uterus which is a rare disease and of which we see very few cases, and he has brought it up from the histological and pathological standpoints, and we ought to be grateful to him for refreshing our memories on this.

I have nothing to add to the discussion except that in one way it seems another reason for doing panhysterectomy as we all know these cases cannot be diagnosed before operation. They are seldom diagnosed. They are diagnosed when there is a mass in the vagina. But as to the degeneration of a fibroid or a polyp into fibrosarcoma, we don't know. We get bleeding, but the curette doesn't give us the information we want. So that as in the case I mentioned in the paper, if we are going to do a hysterectomy for fibroids, why not do a panhysterectomy so that then this one per cent of sarcoma is out of the way and the field is clear?

An interesting article by Dr WILLIAM LEWIS has appeared in the *Johns Hopkins Bulletin* wherein he says he is now able to determine the kind of a tumor from its vascular formation after the tumor is removed. He has injected fibroids and sarcomata and carcinomata and he finds a striking difference in the vascularization of these various tumors. It is a very interesting article which would well repay reading.

DR D W PARKER, Manchester. Dr Miller's very comprehensive paper needs very little discussion. I was surprised at his statistics of one per cent of sarcoma. To my knowledge I have never had a single case of sarcoma of the uterus. This means that I have been either fortunate, or have been careless in not sending all of my fibroids for pathological examination.

One point it brings up is that we must not be misled by the apparent microscopic appearances in the specimen we remove. Of course, in the large hospitals the pathological examination is automatic. In our small hospitals here pathological examinations are not automatic. They have to be obtained sometimes with a little effort and difficulty, and sometimes we get a bit careless when we think a thing is obviously what it appears to be.

DR CHARLES A PORTER, Boston. I do not think that after performing multiple myomectomies that all of the fibroids would be automatically examined unless some one of them looked suspicious.

DR STEPHEN RUSHMORE, Boston. This condition described by Dr Miller is very interesting. He called attention to one per cent of fibroids showing malignant or sarcomatous degeneration, a figure probably not too high for larger series of cases also. I think the more carefully fibroids are investigated, the higher the figures will be.

If we accept one per cent of sarcomata in myomata, and then add two per cent of carcinomata, we have a percentage at least as high as

the difference in the mortality between radical and conservative operations for myomata (panhysterectomy as compared with supra-vaginal hysterectomy)

So we have here another suggestion and indication that the radical procedure is the operation of choice in myomata

What is a sarcoma? Figures compiled years ago as to frequency are not strictly applicable today for it has been shown that a considerable

number of leiomyomata are malignant. We shall find, I think, that the more frequently investigations are made, the higher the percentage of malignant tumors among myomata

DR R H MILLER Boston (closing) I have nothing further to add of importance. There were occasional reports of other malignant tumors such as endothelioma, also large lipomata of the uterus all of which are very rare and practically never diagnosed before operation

## THE INFLUENCE OF PARATHORMONE ON BONE REGENERATION\*

BY JACOB FINE, M. D.,† AND SAMUEL BROWN, M. D.‡

IN 1907, Erdheim<sup>1</sup> reported experiments on rats which showed that, as a result of parathyroidectomy, the teeth lost their yellow transparent appearance and became white and opaque, moreover, that they grew longer and, due to increased brittleness, were distorted in shape. He noted also that there was a diminished and delayed deposition of calcium in the dentine, and that the enamel was decreased and thin, or quite lacking. Hohlbaum<sup>2</sup>, and others, confirmed these results as well as Erdheim's further contention that reimplantation of the glands restored the teeth to normal. However, other observations made by Erdheim<sup>3</sup> (to the effect that parathyroidectomy caused (a) delay in the healing of fractures, (b) diminished or complete lack of calcification in newly developing bone, (c) softening and spontaneous fractures in the skeletal bones, and (d) shrinking of the zone of proliferating hypertrophic cartilage which became well calcified) were not substantiated either by Hohlbaum, by Jovane and Vaglio<sup>4</sup>, who worked with dogs, or by Korenchewsky<sup>5</sup>. The latter makes the point that Erdheim's experiments suffer from lack of dietary control. Leopold and Reuss<sup>6</sup> analyzed seven of Erdheim's parathyroidectomized rats, but found no consistent change in the skeletal calcium from that of normal rats of the same age, on the other hand, the soft tissue calcium was increased in all of them.

In 1914, Erdheim<sup>7</sup> supplemented his original work with the observation that spontaneous rickets in rats was associated with hyperplasia and hypertrophy of the parathyroids. Ritter<sup>8</sup> found that in human rickets there was a hyperplasia of the parathyroids, and that, contrary to the normal appearance of these glands, the light cells exceeded the darker ones in number, but these changes were demonstrable only in severe cases. Pappenheimer and Minor<sup>9</sup> found a similar condition in these cases, and Doyle<sup>10</sup> reported, in 1925, an enlargement of the parathyroids in rachitic chickens which had latent tetany and calcium deficiency. He stated that this enlargement was characteristic enough to make this finding a method of differential diagnosis between the leg weakness of rickets and that due to other causes.

Tomeszewski<sup>11</sup>, in 1912, investigated the parathyroids in twenty cases of pathological calcification,—e. g. that found in tuberculous processes,

These experiments were carried out at the Department of Surgical Research of the Harvard Medical School at the suggestion of Dr. E. P. Richardson. We are indebted to him and to Dr. J. C. Aub for very kind guidance and advice. The work was greatly facilitated by the kind co-operation of Dr. A. J. McLean, Austin Fellow in charge of the laboratory to whom we wish to express our thanks.  
†Recipient of Dalton Scholarship for 19-67 from Massachusetts General Hospital.

‡For records and addresses of authors see This Week's Issue page 965.

arteriosclerosis, and early calcifying ribs and larynx,—and in many cases discovered an increase in the number and size of the oxyphil cells. Todyo<sup>12</sup>, in 1912, described a hyperplasia of the glands in six out of seven cases of osteomalacia, and in eight out of eleven of osteoporosis, whereas only four of twenty-four normal skeletons showed such changes. But Ritter<sup>13</sup> found the degree of hyperplasia variable. Meyer<sup>14</sup>, in 1917, described a case of osteitis fibrosa cystica associated with a benign tumor made up of normal-looking parathyroid tissue. Findings similar to Meyer's were reported by Schmorl<sup>15</sup>, Bauer<sup>16</sup> and Hohlbaum<sup>17</sup>. Recently Dr. Harvey Cushing told one of us of a case of acromegaly in which he found at autopsy a tumor of the parathyroids. Goedel<sup>18</sup> reported a cancer of the parathyroid associated with osteitis fibrosa cystica. On the basis of such observations extirpation of the parathyroids was practiced in a case of osteitis fibrosa reported by Mandl<sup>19</sup>.

Glisson<sup>20</sup> removed the external pair of glands with the adherent portion of thyroid in young dogs, and obtained an arrest of bone growth with death from cachexia in four months. Hammett<sup>21</sup>, studying for seventy-five days the growth of the humerus in a thyroparathyroidectomized rat, found its development retarded, but this was proportionately less than the retardation of growth of the animal as a whole.

Ogawa<sup>22</sup> investigated the relation of the gland to the healing of fractures and reported that union was slower following removal of the glands. Dieterich<sup>23</sup> found that this procedure delayed callus formation, but that X-ray and histological examination proved that otherwise the process was normal in every respect.

Morel<sup>24</sup>, in 1909, found in cats a marked retardation in the calcification of callus after parathyroidectomy, but only in young animals, not in adults. He injected a parathyroid extract subcutaneously, which, in young animals, produced bones twice the thickness of his controls, regardless of the amount of calcium in the food.

Some of the above experiments are called into question as a result of recent work by Gates and Giant<sup>25</sup>, who demonstrated fairly conclusively that subtotal removal of the parathyroids creates a deficiency which is rapidly compensated by hypertrophy of the remaining tissue, and that the blood calcium is restored to normal in a week to ten days. Anything short of complete removal therefore is not a reliable test of underfunction of the tissue after this period of time. Furthermore, Swingle and Nicholas<sup>26</sup> have shown that, for example, in the cat, it is very difficult to totally remove all the parathyroid tissue on account of the widespread distribution

of accessory glands in the cervical fascia and the thymus

In 1924 Collip<sup>22</sup> isolated the active principle of the gland and thus made possible a more precise study of the effect of the hormone on the metabolism of bone

So far we have been unable to find anything in the literature on the effect of the extract on

the role of the periosteum could be more or less standardized. The dogs were kept isolated and on a milk and meat diet so that an adequate calcium intake was provided. In each experiment two dogs as nearly alike in age and size as could be obtained were used, one of them receiving the extract for the greater part of the postoperative period. Adult and young dogs were run, using different doses of the extract and allowing varying periods of time for bone repair. Histological examination of the specimens revealed nothing not already obvious from the X-ray studies



FIG 1

Corresponding femora of 2 dogs (young adults) (Nos 1 and 3 respectively) showing healing of lesion (button of bone removed by trephine) 53 days after operation. Dog 3 received 450 units of parathyroid extract over a period of 40 days (half the full physiological dose determined by Collip). Dog 1 received no extract. Result: No essential difference in calcification.

the calcification of bone aside from scattered statements referring to its use in abnormal cases of bone metabolism.

Our experiments on this aspect of the subject were done on dogs. They consisted of a study of bone repair under the influence of the extract.\* The injury of the bone which we first produced was a trephine opening in the femur. This was done on four adult dogs, two of which received full physiological doses of the extract.

There was no marked difference in the resulting regeneration as far as was evident from X-ray or from gross or microscopic study of the specimens (See Figs 1 and 2). But we soon abandoned this procedure because of the variable factor arising from the impossibility of reapproximating the periosteum when only a button of bone is removed. Instead, we preferred to remove a rib subperiosteally and watch the effect on a perfectly splinted bone lesion in which



FIG 2

Dogs 2 and 4 (young adults) treated in same way as Dogs 1 and 3 (see legend for Fig 1). Dog 2 (femur on left) was the control. Dog 4 received 450 units (full physiological dose) over a period of 3 weeks following operation and died from parathormone poisoning. Dog 2 sacrificed on same day. Result: No essential difference in calcification.

The first two sets of observations were obtained on four vigorous young adult dogs, one-half the full physiological dose being used on the first set of animals. Subcutaneous injections were made every day or every forty-eight hours. In the first experiment the dogs were run for 47 days. The regeneration was good in both animals, if anything better in the dog which received the extract (see Fig 3). In the second experiment the full physiological dose was used, but the dog receiving parathormone died at the end of three weeks postoperatively from parathormone poisoning. In this animal the regeneration was distinctly poorer than in the calcification was less than in the first series because of the shorter period of the experiment, but the poor result in the dog receiving extract was due either to the greater dose of parathormone, or more probably to the fact that a good approximation of the periosteum was not made because of the speed necessary to close a hole made in the parietal pleura during the rib resection.

In the third and fourth sets of adult dogs we observed very poor regeneration in all four animals. These were carried for four weeks post-

\* This was very kindly supplied to us gratis by the Eli Lilly Co. of Indianapolis.



FIG 3

Dogs 1 and 3—respectively—showing regeneration of rib resected subperiosteally 6 days after femoral lesion was produced. Specimens removed at autopsy 47 days after operation. Dog 3 (extract dog) shows somewhat better regeneration—but probably the difference is attributable to a more accurate reapproximation of the periosteum. Adjacent ribs included in photograph show no essential effect on normal bone as a result of parathormone administration.

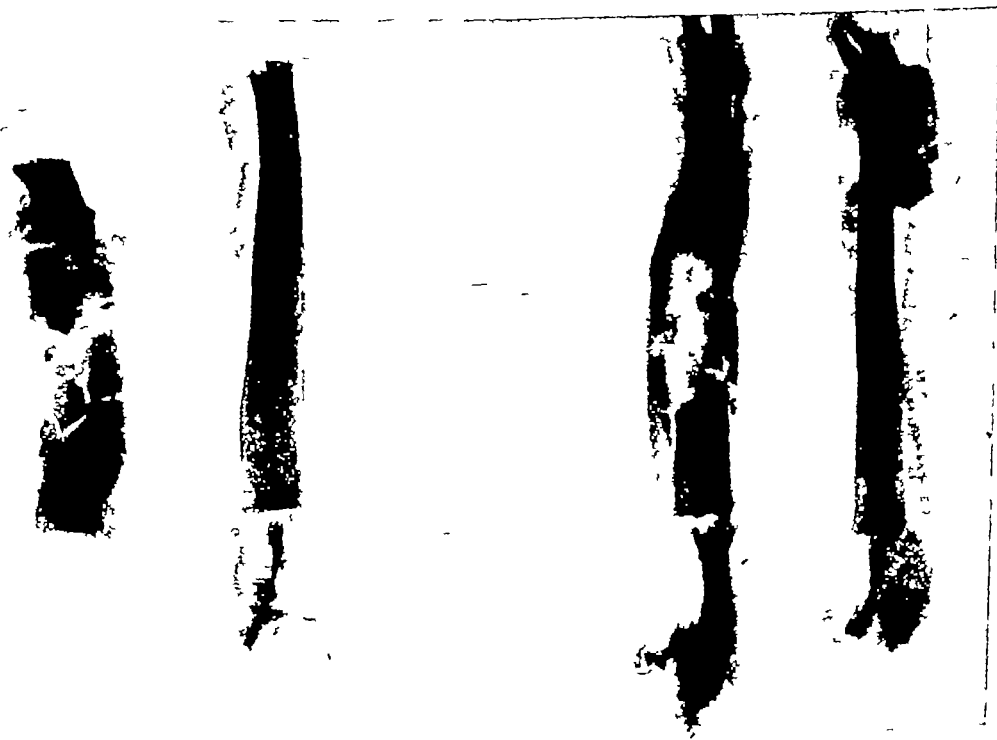
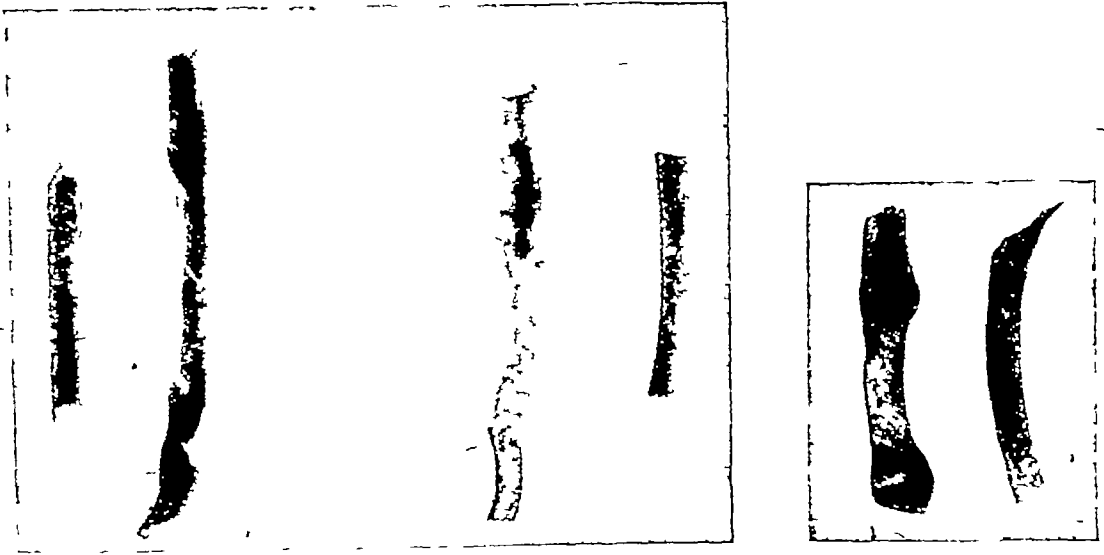


FIG 4

Dogs 2 and 4 (autopsy specimens) respectively—treated same as Dogs 1 and 3 (see Fig. 3). Specimens removed at autopsy 16 days after operation. Regeneration therefore not so far advanced and distinctly poorer in the dog receiving parathormone. This was however probably directly attributable to a wholly inaccurate suture of the periosteum due to speed necessary to close an unintentional perforation of the parietal pleura. Here too the adjacent ribs show no difference in calcium deposition. The width of the ribs varies in the different figures because of the plane in which the ribs lay when the X-rays were taken.



FIGS 5 AND 5A

FIG 5—Dogs 8 and 9 (pups—age 6 weeks) of the same litter showing resected specimens after regeneration of subperiosteally resected ribs with portions of adjacent ones for comparison, removed subperiosteally 27 days after operation. Dog 9 received 110 units of parathormone in 24 days post-operatively ( $\frac{1}{2}$  full physiological dose). Dog 8 received no extract. The regeneration is not only obviously better in the control dog (the crack in the center was traumatically produced during resection) but during the removal of these specimens the periosteum was a well formed distinct membrane in Dog 8 and stripped easily whereas in Dog 9 it was thicker softer and quite adherent externally to the regenerating rib.

FIG 5A—Shows the regeneration in another rib of Dog 9 resected subperiosteally at the time of removal of the specimen in Fig 5. This regeneration took place in 23 days and during this second phase no extract was given—showing better regeneration than during a 27-day period with extract (see Fig 5).

operatively, and the poor response is probably due to the fact that they were all old dogs.

A more clearly defined situation seems to ex-

ist in the case of young animals (see Figs 4, 5, 5A, 6, 7 and 7A), for, in pups or adolescent dogs under the same conditions there is a definite difference with respect to the facility with which calcium is deposited in newly forming bone. The extract inhibited calcification to a noticeable degree in four sets of experiments on dogs varying between three and ten weeks of age. In this series we had excellent controls with one exception (see Fig 7) because in each case we had two animals from the same litter. In one experiment furthermore we obtained another type of control by using the same dog for a period of regeneration under the influence of the extract followed by an equivalent period without it. Here too, the regeneration was distinctly better during the second period when no extract was used.

Although the number of experiments is small it is reasonable to conclude that parathormone seems to delay the speed of deposition of calcium in regenerating bone of young dogs, whereas no clear evidence as to its potency in this or the reverse direction is available for adult dogs.

The practical significance of these observations is that the clinical use of the extract for delayed bone union is not based on any sound principle can do little, if any good, and, in fact, may do harm. This is not in accord with Morel's findings with the use of his own extract, but there is no evidence that the extract he used in 1912 was potent or specific. It is further not clear why the removal of the gland should decalcify bone as Erdheim claims, when we have this observation of the inhibition of calcification by providing what is probably the equivalent of an oversupply of the gland. But,

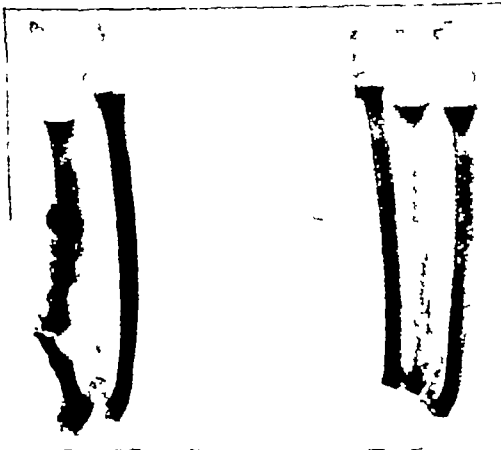


FIG 6

Dogs 10 and 11 respectively (autopsy specimens) about one month old, each weighing 2.2 kilos and from the same litter. Dog 10 was the control—and died 25 days after operation (autopsy disclosing no obvious cause of death). Dog 11 was sacrificed 23 days after operation—having received only  $\frac{1}{4}$  of full physiologic dose of parathormone in 23 days. Regeneration distinctly better in the control dog (the wrinkled appearance due to a too tightly pulled continuous periosteal stitch). Periosteal suture was carefully done in both animals. The apparent decalcification of the operated rib is about equal in both animals.

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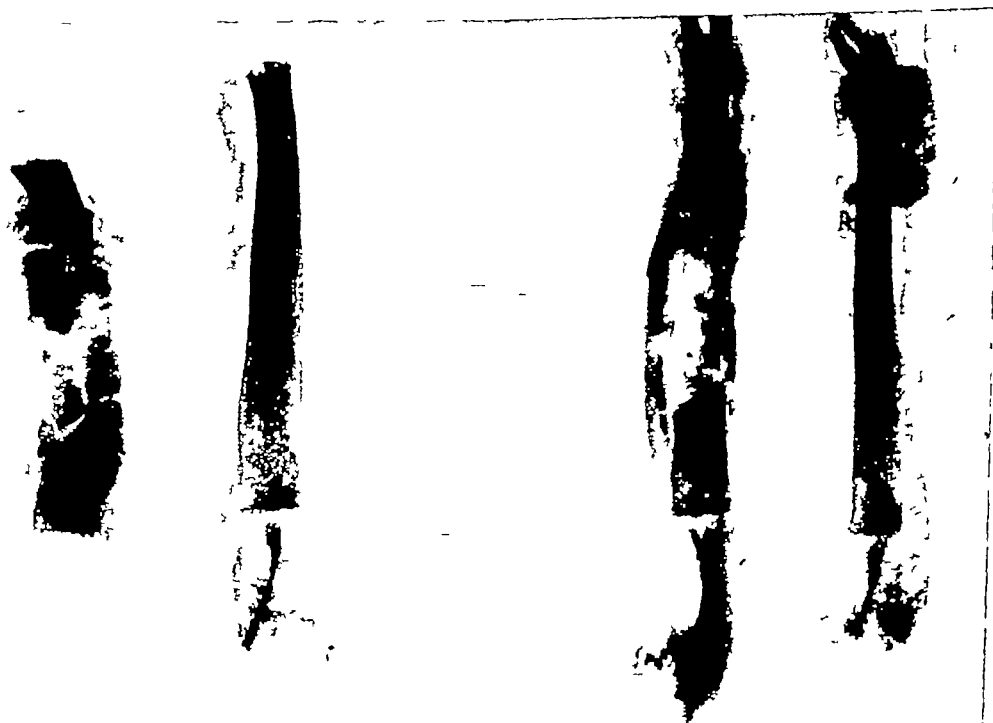


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as already stated, this claim has not been confirmed. Whether these experiments support the assumption suggested by the case reports on osteitis fibrosa and osteomalacia, that the hyperthrophied parathyroids found in these cases means decalcification from an oversupply of the glandular secretion, is purely a matter of opinion.

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## PSYCHOPATHOLOGY AND TREATMENT OF THE PSYCHONEUROSES\*

BY WILLIAM B TERHUNE M D †

I WISH to discuss with you an illness that causes unusual suffering for a psychoneurosis not only makes the patient and his family suffer—it often distresses the doctor as well. I am especially appreciative of your invitation to address you today since it has helped me to attempt to define a psychoneurosis. It is difficult to find a satisfying definition of the condition and I have tried to evolve a criterion which might help to differentiate the psychoneuroses from other closely allied conditions.

First it should be stated that at present I believe in the psychogenic causation of and approach to the treatment of the psychoneuroses. I make careful physical examinations, X-ray teeth give gland extracts,—all in the hope that I may find a causative or at least a contributing, physical factor. But at the present stage of our knowledge the psychogenic explanations seem most logical and to produce the best results.

A psychoneurosis is multiform in its manifestation and causation. It is a functional disorder, not only because there are no physical causes explaining it, but more particularly because it is so intimately associated with the affective life of the individual. It is the result of a series of reactions constitutional and environmental in nature. In studying an individual case it is necessary to determine what type of person the individual is constitutionally or inherently then what conditioned responses have been built up as the result of environment and training and finally to search for precipitating situational factors. A large number of psychoneurotics have serious constitutional handicaps, some of these must be adjusted on a very low level of attainment. In the majority of cases the handicap is a result of individual experience such as emotional trauma, lack of training or poor training. Such patients are promising

subjects for psychiatric reëducation. In every case there are precipitating situational factors which will explain the more severe symptoms, the nature of the symptoms being determined by such precipitating causes.

Many patients have mild mental disorders which are more closely related to psychotic than psychoneurotic conditions. Among these cases the mild affective reactions—such as those individuals showing cyclic mood alternations and the involutional depressions—are most common. Many of the so-called borderline cases might be classified as constitutional psychopathic states, while some others have schizophrenic tendencies with a paranoid trend. There is a large number of these mild mental patients of the three types just mentioned, who are able to adjust sufficiently satisfactorily to enable them to remain in the community. In a consideration of the psychoneuroses, these conditions are eliminated.

A psychoneurosis then, might be described as a mild mental disorder with a tendency to chronicity. Hallucinations and delusions are absent, the emotional responses of the patient are relevant and the patient is completely in touch with reality—in fact he usually seems too acutely aware of reality and how it does or might affect him. The condition is usually roughly recognized because of the characteristic symptoms of neurasthenia, hysteria, the anxiety neuroses and psychasthenia.

The diagnosis of a psychoneurosis must not be made merely in the absence of physical findings, for such a condition may even co exist with organic disease. The symptoms presented by the patient make us suspicious of a psychoneurosis, usually the chronicity strengthens such a suspicion, a careful study of the life history of the individual gives us some hint as to his preferred psychic reaction patterns—which are often psychoneurotic in nature—and a careful physical examination reveals the degree and quality of his physical adequacy. The most important diagnostic factor is a recent and relevant emo-

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ary 10 1928 from the Austen Riggs Foundation  
†For record and address of author see "This Week's Issue"  
page 975





FIG 7

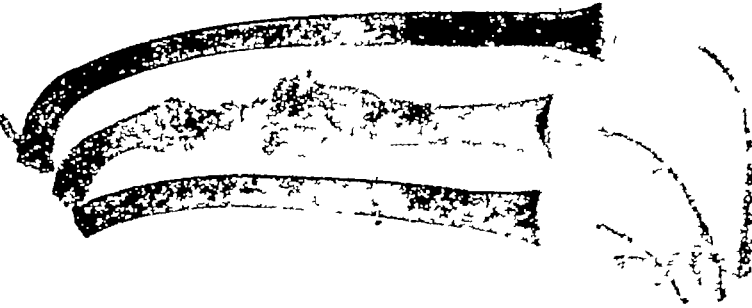


FIG 7

Dogs 17 and 18 respectively (autopsy specimens)—adolescent  
ment were all in favor of the control. The conditions of the experi-  
ment were all in favor of the dog injected with parathormone  
because the control animal was sacrificed 17 days after opera-  
tion owing to a prolapsed rectum and the parathormone-treated  
was run for 14 days on a full physiologic dose and sacrificed  
19 days after operation though in good condition. In spite of

these advantages, regeneration was distinctly poorer in the dog  
which received the extract.  
In a similar experiment run at the same time the control  
animal acquired distemper immediately after operation and died  
17 days later in a terribly dehydrated condition having taken  
almost no food during the post operative period. The regenera-  
tion was almost nil. If Dog 17 17 kilos heavier than the

FIG 7A



extract dog of this experiment, is substituted as a control, the  
regeneration is again better even though the extract dog's spec-  
imen was of 21 days duration as against 17 days for Dog 17  
(Fig 7A).  
In both experiments there is distinct decalcification according  
to the X-ray of the femur, radius and ulna in the parathor-  
mone dogs by comparison with the control.

such as those typified by reconciling childish ambitions with adult ability and opportunities

#### 7 Phantasy-hysterical reaction

7 Books have been written on the hysteria reaction. One fact, however, is evident: people who have true hysteria are constitutionally different from those who do not. There is an hysterical type of personality. People who have hysteria have shown a life-long tendency to disassociate; they are day-dreamers and live much of their lives in phantasy. An hysterical reaction is an automatism of escape occurring in a person either constitutionally given to disassociation or trained to disassociate because of much day-dreaming.

#### 8 Fright and phobias Affect displacement

8 The phobic reaction is a most difficult one to understand, for the basis of the fear is not that object or situation which the patient says and thinks he is afraid of. The phobias are constitutionally apprehensive, cyclothymic individuals. The phobia may be a psychic equivalent for a depression, apparently occurring without adequate reason, just as a depression at times seems to be a constitutional reaction. Again the phobia exists on the basis of a displacement reaction. A person may have a definite fear which his conscience is unwilling to admit to consciousness, as a result the affect is displaced from its original object, and is expressed as an unreasonable and overpowering fear.

#### 9 Reaction to maturity and dreaded involution

9 Human beings have to take many hurdles in life's obstacle race: puberty, college, financial responsibility, marriage, childbirth and old age are periods when psychoneurotic reactions are most apt to occur, and of these the middle-age reaction is the most serious. When women pass the menopause, they feel that their life is spent and when men are around fifty they have a similar reaction. Most human beings have wished to accomplish many things before they die and most of us in youth do not realize that it is not possible to accomplish most of our infantile desires. Therefore when we reach middle age we have a sense of futility and disappointment, the source of much of which is unconscious, resulting often in a definite depression.

#### 10 Sex motivated reactions

10 Interference with the normal sex drive causes psychoneurotic reactions and this may be the result of a number of situations or conditions. There are a number of married women who suffer sexual excitement without experiencing the relief of an orgasm, who exhibit a rather characteristic excitable and overmobilized personality. Unfortunate and undigested sex experiences, as well as marital sexual maladjustments, may appear either as the cause or a symptom of a psychoneurosis.

justments, may appear either as the cause or a symptom of a psychoneurosis

#### 11 Sickness as a method of warfare

11 Husbands and wives, children and parents, and closely associated relatives often wage chronic warfare; should one of the combatants become ill during the course of the belligerency, the ready and all-subduing weapon of sickness is placed in his hands. Illness as a method of warfare is usually resorted to by one who is in danger of losing the battle.

#### 12 Faulty habits of living

12 Faulty habits of living, such as an improper daily balance of work, play, exercise and rest, lead to neurotic symptoms. Lack of relaxation and recreation is most apt to give rise to such transient conditions.

#### 13 Acute grief

13 There is a repressed acute grief reaction which is evidenced as a psychoneurotic illness. Persons suffering the loss of a loved relative may often become ill as a result of intolerance, self-pity or pent-up emotion. People who do not cry when someone they love dies are inhibiting a strong emotion and once again the inhibition may extend to all the mental content, causing a depression. Another manifestation of repressed grief is uncontrollable crying, the patient not experiencing a feeling of grief and not understanding the paroxysmal crying.

#### 14 The reaction to a feeling of insecurity

14 The feeling of insecurity may be the cause of a psychoneurosis. Many people have, for one reason or another, contracted a feeling of their inadequacy or inferiority. Under certain conditions of strain this gives rise to a chronic feeling of insecurity. This may create continual emotional perturbation, activating various psychoneurotic symptoms.

#### 15 The hyper-reactive

15 There are certain people who over-react to most situations. They are usually overmobilized, impatient and are unduly affected by stimuli. Their sense of proportion being disturbed they dramatize and exaggerate all their reactions. These patients usually have a cyclothymic type of personality.

#### 16 The hypo-reactive

16 There are a few hypo-reactive individuals who seem very much out of touch with their environment. These are rather apathetic, uninterested, unaffected by outside stimuli; such patients have a schizophrenic type of personality.

The description of psychopathologic manifestations could be continued almost indefinitely, for there are an infinite number of possibilities. Seventy-five per cent of the psychoneurotic illnesses, however, seem to be motivated by one or more of the reactions described. Other mech-

tional strain. Such a factor is present in every case and is intimately tied up with the illness.

#### SOME USUAL PSYCHOPATHOLOGIC MANIFESTATIONS

The classification of the psychoneuroses as hysteria, neurasthenia, psvechasthenia and anxiety neurosis (a traditional classification based on a certain grouping of symptoms) conveys very little idea as to the nature of the patient's illness. The logical approach to a better understanding is through a comprehension of some of the basic reactions underlying nervous illness.

The following reaction types are frequently encountered and seem to present the psychic basis of the patient's illness. Several of these reactions may be observed in an individual patient.

##### 1 The escape and defense reactions

1 The most frequent cause of a psychoneurosis is fear, and it is usually evidenced as an escape or defense reaction. For centuries human beings have built up methods of escaping difficulties and responsibilities. It would seem that certain of these reactions have become so deeply ingrained in the human race that they occur automatically, the automatism of escape usually being evidenced as an illness. Illness is a logical method of escape for two reasons: society grants a lower level of responsibility to people who are ill than for any other reason and, secondly, when people are in the throes of fear, the autonomic nervous system is so affected as to give rise to temporary symptoms of sickness. The escape reaction is usually an acute phase while the defense reaction is similarly motivated, usually occurring secondary to the acute phase, and consists of automatically building up self-protective reactions, often evidenced as chronic illness in order that fear may be avoided in the future.

##### 2 Hypersensitization to sensation, suggestion, emotion

2 Practically all who suffer from psychoneurosis are sensitive. A group of these patients are seen whose illness is characterized by a hypersensitization to specific sensations. In these cases the attention is fixed on the body and the patients are connoisseurs in sensation. Most of these hypochondriacal tendencies are based on fear, coupled with conditioned responses as a result of unpleasant sensory experiences. Suggestions may play an important rôle in causing such conditions.

##### 3 The conditioned response

3 The conditioned emotional or sensory responses are both factors in causing certain types of psychoneuroses. Pawlow demonstrated what he called the "conditioned reflex", showing how conditions merely present at the time of a reaction might in turn become a stimulus to set off

this reaction. Certain psychoneurotic reactions can be explained in this way.

##### 4 Anomalies of judgment

4 Next to fear and sensitiveness poor judgment is the most frequent cause of a psychoneurosis. One of the outstanding facts about a psychoneurotic is his lack of judgment, which may be either the cause or a result of the illness. In either case it materially helps to continue the illness. A careful study of the life histories of patients reveals that there are some who have constantly shown poor judgment in meeting both the major and minor situations of life. As a result they are constantly inadvertently creating situations which upset them emotionally and make them ill. People can be taught to use good judgment. The psychiatrist treating the mild mental illnesses must often not only temporarily supply the better judgment for his patient but also must teach him how to use better judgment.

##### 5 Repressions and inhibitions

5 The intolerant repression of an emotion often results in a growth of intolerance towards the person or thing causing the repression, which will sooner or later result in an explosion. A repressed emotion is often manifested in a form quite different from its original state. Adult sex jealousy is often based primarily on the jealous individual's repressed desire to do exactly what he feels the other person is guilty of.

##### 6 Affective reality maladjustments

6 There is another type of reaction frequently met with which might be termed the "affective-reality maladjustments". In these conditions we find an individual unconsciously straining to satisfy affective cravings which, under the circumstances of the realities of human existence, cannot be attained.

A good example of this is the ruminative phobias, who are constantly trying to analyze all factors underlying their phobias while they continue with their phobic demand for adult protection. Such conditions might be explained as follows. As a child we accept without question the ability of our parents to fully protect us,—in fact, they tell us, "Father will not let anything hurt or bother you." Thus the child is given the only complete protection he will ever experience—and it is only a sense of protection. As we grow up we constantly try to find such protection as we thought we had in childhood, and although the illusion of protection lapses into unconsciousness, the demand for it continues. As this desire for safety comes in touch with the dangerous realities of existence, an emotional perturbation may occur, leading to much thinking and an obsessive preoccupation which is the result of an unconscious effort to reconcile the affect of childhood with adult realities. There are many similar and less complicated affective reality maladjustments—

the place of them Weaving, carpentry, gardening, art, music, correspondence courses, learning Braille and scientific research all offer opportunities for occupational therapy

The psychoneurotic, like most people, needs new interests, help him to find these and show him that he must constantly be on the alert for all new interests which will help him to grow, rather than fall into a mental rut which leads to preoccupation and fixation on self

And if fear is the greatest cause of the psychoneurosis, teach your patients to live adven-

turously Help them to understand that fear may produce such thrills as to put new interest in living

The physician treating a psychoneurotic patient must not be discouraged at his slow progress It would seem that a period of absolute failure precedes most recoveries It has been said that just as the patient is turning the corner on the road to recovery, he is most apt to feel worse, when the patient feels ready to give up that is the time that the doctor has the best chance to get him well

## MINIM METHOD FOR ANALYSIS OF GASTRIC CONTENT

BY MOSES EINHORN, M.D.\*

**T**HE method about to be described is based primarily upon a procedure which I recently devised for analyzing gastric content without using more than two or three drops of the specimen† It is therefore necessary to give a brief summary of this last-named method in order to understand how it was derived from the old method and also to indicate wherein it differs from the one which I am now presenting This is best done by describing how an analysis of gastric content would be made under each of the three methods referred to, namely, the old method, my "simple and rapid method" and the new "minim method"

**OLD METHOD** Let us imagine that 3 c.c. of decinormal sodium hydroxide had to be added to 10 c.c. of the gastric specimen in order to change to yellow the reddish color caused by the previous addition of Toepfer's solution to the specimen Multiplying by ten, we get the number of cubic centimeters of free acid in one hundred cubic centimeters of the particular specimen under examination to be thirty, or  $F$  equals thirty Let us now suppose that two cubic centimeters of the decinormal solution of sodium hydroxide are required in order to bring about a scarlet color in this specimen after the addition of a few drops of phenolphthalein. Again multiplying by ten, we find the number of cubic centimeters of other acids present in this specimen to be twenty and adding this reading to the previous one, we find that the total acid in one hundred cubic centimeters of the specimen under examination is fifty, or  $T$  equals fifty

**SIMPLE AND RAPID METHOD** Using the hypothetical test outlined above as a basis and bearing in mind the fact that the pipette used in this test will deliver twenty minims to the cubic centimeter, I will now proceed to indicate in what fashion I derived this "simple and rapid" method This is done by means of the following equations, in which the minim measure-

ments are substituted for the cubic centimeters and the decinormal sodium hydroxide is replaced by  $N/100$  sodium hydroxide and that in turn, by the  $N/200$  and the  $N/400$  sodium hydroxide Thus

- 3 c. c. of  $N/10$   $NaOH$  are required to neutralize 10 c. c. of gastric content giving the final reading for free acid in 100 c. c. of gastric content as  $F$  equals 30
- (1) or 60 minims of  $N/10$   $NaOH$  are required to neutralize 10 c. c. of gastric content giving  $F = 30$
- (2) or 6 minims of  $N/10$   $NaOH$  are required to neutralize 1 c. c. of gastric content giving  $F = 30$
- (3) or 6 minims of  $N/10$   $NaOH$  are required to neutralize 20 minims of gastric content giving  $F = 30$
- (4) or 3 minims of  $N/10$   $NaOH$  are required to neutralize 10 minims of gastric content giving  $F = 30$
- (5) or 3 minims of  $N/10$   $NaOH$  are required to neutralize 1 minim of gastric content giving  $F = 30$
- (6) or 3 minims of  $N/100$   $NaOH$  are required to neutralize 1 minim of gastric content giving  $F = 30$
- (7) or 1 minim of  $N/100$   $NaOH$  is required to neutralize 1 minim of gastric content giving  $F = 10$

Now substituting  $N/200$   $NaOH$  for  $N/100$   $NaOH$  in equation (6) we get

- (8) 6 minims of  $N/200$   $NaOH$  are required to neutralize 1 minim of gastric content giving  $F = 30$
- (9) or 1 minim of  $N/200$   $NaOH$  is required to neutralize 1 minim of gastric content giving  $F = 10$

Again substituting  $N/400$   $NaOH$  for  $N/100$   $NaOH$  in equation (6) we get

- (10) 12 minims of  $N/400$   $NaOH$  are required to neutralize 1 minim of gastric content giving  $F = 30$
- (11) or 1 minim of  $N/400$   $NaOH$  is required to neutralize 1 minim of gastric content giving  $F = 2\frac{1}{2}$

Using the results obtained in equations No 7, No 9 and No 11, we came to the conclusion in this "simple and rapid method" that the following readings could be used as a standard

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†Einhorn Moses. Simple and Rapid Method for Quantitative Analysis of Gastric Content (Medical Journal and Record November 16, 1927)

anisms might be formulated as explanation of the reaction types described and disciples of various psychological schools might be unwilling to accept some of these postulations. They are, however, an aid to me in understanding and treating patients and present what seems to be a logical working hypothesis.

#### TREATMENT

Many methods of treating the psychoneuroses have been reported, all are more or less efficacious. In recent years there have been no new therapeutic discoveries of consequence, but the psychoanalytic method of study and therapy has stimulated physicians to give time and thought to the effort of understanding their patients. This sympathetic understanding and interest existing mutually between physician and patient is the basis on which all good psychiatric work is accomplished. To this should be added the process of bringing a patient to an understanding of his condition and the causes underlying it, followed by a synthesis of these constructive factors in his life leading to a more satisfactory adaptation. The principal objects of modern psychotherapy will then have been attained.

There are various techniques tending to accomplish these aims, but since one purpose of this paper is to describe how the general practitioner may care for his patients in their homes, a simple technique will be described briefly.

First, evaluate the elements of organic illness and treat them. It is wise to get a patient organically well first, for it is difficult to treat an organic illness and functional difficulty at the same time. Get a complete history, not only of the patient's illness, but also his developmental history.

Then start with the patient on the basis of a functional illness and explain that nervousness is a real condition needing definite treatment. Be prepared to take time with these patients, count on giving them an hour a day for a month of intensive treatment.

Explain the object of treatment, i. e., to restore them to complete usefulness, and that to accomplish this their full cooperation will be needed. Put them on a written schedule, filling every minute of the day. Stress that you are trying to teach them to live, therefore budget their time in terms of work, rest, exercise and play every day, likewise encourage them to build up their physical health and strength. It is a good plan to give patients who are being treated at home a schedule in chart form on which they can keep track of how well they follow their schedule.

Encourage them to talk to you, listen to their stories, give them the relief of a sympathetic listener. Do not advise at first about their troubles, listen, take it under advisement, and they may later find the answer themselves. Most doctors are too busy and too accustomed to giving

orders to listen to the troubles of a psychoneurotic. It is hard not to get impatient with these people—instead, try to understand them, as they talk, you can be trying to figure out why they are as they are.

Be careful not to give them fanciful explanations of the nature of their illness, such as auto-intoxication, glandular dysfunction or general debility, when the trouble is psychic, stick to your guns and see it through on that basis.

Much nervousness is poor mental hygiene. Give your patients a course in mental hygiene. Show them that life is a matter of adaptation. Give them some comprehension of how the central nervous system helps them in this, explain to them how consciousness affects conduct. Give them some understanding of the nature of emotions, instincts and affect.

Explain to them the nature of functional illness and the formation of such symptoms. These symptoms must be treated as realities and patients in general need to be shown why functional symptoms have not the same significance as those caused by appreciable organic lesions. Show them how fatigue may be a matter of mood and emotion and that many physical symptoms are no more than reverberations of the autonomic nervous system.

Teach them to discount sensitiveness, emotions and somatic symptoms, to do this by understanding such symptoms and, therefore, to live objectively, not subjectively.

Convince them that it is unwise to fight their functional symptoms, help them to be more tolerant to such symptoms, then accept them and be willing to live with them. Explain that by so doing their attention will no longer dwell on themselves and their symptoms and, therefore, the symptoms will cease to exist.

With this background, take up their individual emotional experiences, and help revalue them. Investigate their personal difficulties and help them to solve them. And in general assist them to work out an adjustment on a level for which they are suited. Help them to find new interests.

Sensible human beings all have a feeling of inferiority. This is often intensified by illness, especially nervous difficulties. Therefore, always be kind, bolster up their self respect. To scold a psychoneurotic is both brutal and poor technique.

Occupation is an important part of therapy in treating psychoneurotics. Keep them busy, show them that it is not sufficient to merely accomplish things but that they must learn the joy and satisfaction of skilful craftsmanship. A person who has a psychoneurosis needs some occupation, as a temporary therapeutic measure, which is stimulating to his intelligence and which will arouse new interests, for this reason it is often wise to have such patients take up some new form of work which may either supplement their regular jobs or temporarily take

the place of them Weaving, carpentry, gardening, art, music, correspondence courses, learning Braille and scientific research all offer opportunities for occupational therapy

The psychoneurotic like most people needs new interests, help him to find these and show him that he must constantly be on the alert for all new interests which will help him to grow, rather than fall into a mental rut which leads to preoccupation and fixation on self

And if fear is the greatest cause of the psychoneurosis, teach your patients to live adven-

turously Help them to understand that fear may produce such thrills as to put new interest in living

The physician treating a psychoneurotic patient must not be discouraged at his slow progress It would seem that a period of absolute failure precedes most recoveries It has been said that just as the patient is turning the corner on the road to recovery, he is most apt to feel worse when the patient feels ready to give up, that is the time that the doctor has the best chance to get him well

## MINIM METHOD FOR ANALYSIS OF GASTRIC CONTENT

BY MOSES EINHORN M D \*

**T**HE method about to be described is based primarily upon a procedure which I recently devised for analyzing gastric content without using more than two or three drops of the specimen It is therefore necessary to give a brief summary of this last-named method in order to understand how it was derived from the old method and also to indicate wherein it differs from the one which I am now presenting This is best done by describing how an analysis of gastric content would be made under each of the three methods referred to namely, the old method, my "simple and rapid method" and the new "minim method"

**OLD METHOD** Let us imagine that 3 cc of decinormal sodium hydroxide had to be added to 10 cc of the gastric specimen in order to change to yellow the reddish color caused by the previous addition of Toepfer's solution to the specimen Multiplying by ten, we get the number of cubic centimeters of free acid in one hundred cubic centimeters of the particular specimen under examination to be thirty, or  $F$  equals thirty Let us now suppose that two cubic centimeters of the decinormal solution of sodium hydroxide are required in order to bring about a scarlet color in this specimen after the addition of a few drops of phenolphthalein Again multiplying by ten, we find the number of cubic centimeters of other acids present in this specimen to be twenty and adding this reading to the previous one, we find that the total acid in one hundred cubic centimeters of the specimen under examination is fifty, or  $T$  equals fifty

**SIMPLE AND RAPID METHOD** Using the hypothetical test outlined above as a basis and bearing in mind the fact that the pipette used in this test will deliver twenty minims to the cubic centimeter, I will now proceed to indicate in what fashion I derived this "simple and rapid" method This is done by means of the following equations, in which the minim measure-

ments are substituted for the cubic centimeters and the decinormal sodium hydroxide is replaced by  $N/100$  sodium hydroxide and that, in turn, by the  $N/200$  and the  $N/400$  sodium hydroxide Thus

- 3 c. c. of  $N/10$  NAOH are required to neutralize 10 c. c. of gastric content giving the final reading for free acid in 100 c. c. of gastric content as  $F$  equals 30
- (1) or 60 minims of  $N/10$  NAOH are required to neutralize 10 c. c. of gastric content giving  $F = 30$
- (2) or 6 minims of  $N/10$  NAOH are required to neutralize 1 c. c. of gastric content giving  $F = 30$
- (3) or 6 minims of  $N/10$  NAOH are required to neutralize 20 minims of gastric content giving  $F = 30$
- (4) or 3 minims of  $N/10$  NAOH are required to neutralize 10 minims of gastric content giving  $F = 30$
- (5) or 3 minims of  $N/10$  NAOH are required to neutralize 1 minim of gastric content giving  $F = 30$
- (6) or 3 minims of  $N/100$  NAOH are required to neutralize 1 minim of gastric content giving  $F = 30$
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- (8) 6 minims of  $N/200$  NAOH are required to neutralize 1 minim of gastric content giving  $F = 30$
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Again substituting  $N/400$  NAOH for  $N/100$  NAOH in equation (6) we get

- (10) 12 minims of  $N/400$  NAOH are required to neutralize 1 minim of gastric content giving  $F = 30$
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Using the results obtained in equations No 7, No 9 and No 11, we came to the conclusion in this "simple and rapid method" that the following readings could be used as a standard

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Every time we used one minim of N/100 NAOH to neutralize one minim of gastric content, we could add to the final reading F equals 10 if the Toepfer reagent had been used, or T equals 10 if the phenolphthalein reagent had been used. Similarly, each drop of N/200 used would add five to the final reading and each drop of N/400 used would add two and one-half to the final reading. It will be noted that in the example given above pipettes which delivered 20 minims to the cubic centimeter were used. However, the standards which we have obtained are not dependent upon the use of that particular size of pipette. Pipettes which deliver any number of minims to the cubic centimeter may be used but what is required is that the same size and type of pipette should be used for the neutralizer as is used for the gastric content.

**MINIM METHOD** In the old method and in the "simple and rapid method", it was necessary to apply the reagent and the neutralizer separately. In addition to complicating the test, this procedure was disadvantageous in that too strong a concentration of the reagent would often be added to the specimen and thus mitigate the accuracy of the results. Another difficulty was that the technician, through lack of a suitable standard, could not readily tell when the mixture had attained the proper color. It occurred to me that if we could mix the reagent and the neutralizer in the proper proportions and still retain the standard readings used in the "simple and rapid method", the above mentioned difficulties would be eliminated. After considerable experimentation, I have found the proper proportions for the various reagents and neutralizers and have incorporated them in six solutions, the names and compositions of which follow:

*Yellow Solution No 1*—1 minim of Toepfer's Solution to 5 c c of N/100 NAOH

*Yellow Solution No 2*—2 minims of Toepfer's Solution to 5 c c of N/200 NAOH

*Yellow Solution No 3*—3 minims of Toepfer's Solution to 8 c c of N/400 NAOH

*Scarlet Solution No 1*—1 minim of Phenolphthalein to 12 c c of N/100 NAOH

*Scarlet Solution No 2*—1 minim of Phenolphthalein to 7 c c of N/200 NAOH

*Scarlet Solution No 3*—2 minims of Phenolphthalein to 9 c c of N/400 NAOH

Since the creation of these solutions did not destroy the standard readings referred to above, we can now say that for every drop of No 1 Solution (Yellow or Scarlet) used in this test the final reading is increased by ten, for every drop of No 2 Solution used (Yellow or Scarlet) the final reading is increased by five and for every drop of No 3 Solution used (Yellow or Scarlet) the final reading is increased by two and one-half.

Before outlining the procedure followed in this "minim method", it is again necessary to caution the technician to use the same type and size pipette for the gastric content as is employed for the neutralizer because the standard readings given above apply only when the same size minim is used throughout the test. In this connection, I have found it best to use pipettes which have their ends bent in a 60° angle, for, by holding these pipettes in a horizontal position, the technician can be sure that the pipette is being held in that position in which it will always deliver the same sized drop.

**METHOD (A) TO DETERMINE THE AMOUNT OF FREE ACID** Using the type of pipette referred to above, the technician takes one clear drop of the gastric specimen and places it in the special paper tray (See Fig 1). When the Yellow Solution is first applied, a reddish color is obtained if there is free acid present. The next few applications will usually intensify this reddish color while succeeding applications of the Yellow Solution will gradually cause the specimen to take on a reddish-yellow color. At this point, the technician replaces the Yellow Solution No 1 with the weaker solutions (No 2 and No 3) and uses these until the specimen is exactly the same color as the Yellow Solution. If the specimen turns the desired color immediately upon the application of the first drop of Yellow Solution No 1 it is usually an indication that the specimen contains no free acid. However, the examiner should place another

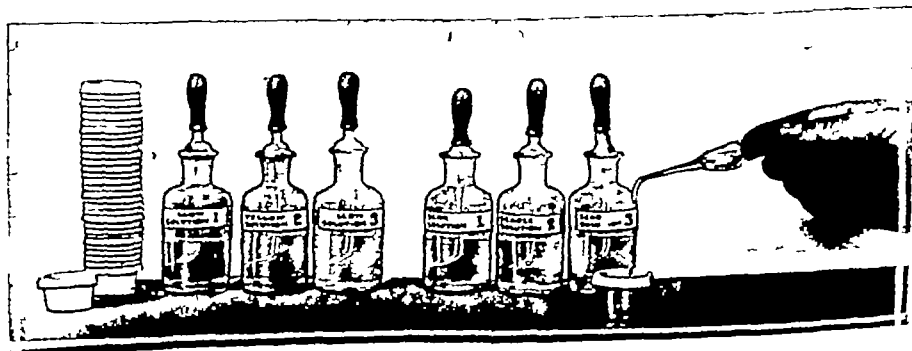


FIGURE 1

drop of the specimen in a new tray and proceed to test with the weaker solutions No 2 and No 3 in order to detect and measure whatever small amounts of free acid may be present. The amount of free acid in the specimen is determined by noting how many minims of the various Yellow Solutions were required to give the specimen the same color as the Yellow Solution. For each drop of Yellow Solution No 1 the final reading is increased by ten and in like fashion the technician adds five for each drop of Yellow Solution No 2 and two and one-half for each drop of Yellow Solution No 3. Thus if the technician uses two minims of Yellow Solution No 1 one minim of Yellow Solution No 2 and one minim of Yellow Solution No 3, the final reading will be "Free acid =  $27\frac{1}{2}$ ."

(B) TO DETERMINE THE TOTAL ACIDITY. The technician takes another clear drop of the gastric specimen and places it in a new paper tray. At first when the Scarlet Solution No 1 is applied its color will be quickly lost in that of the specimen. The technician continues adding Scarlet Solution No 1 until the specimen begins to turn scarlet. At this point, he replaces the Scarlet Solution No 1 with the weaker solutions No 2 and No 3, and applies these until the specimen is almost the same color as the Scarlet Solution. As in the test for free acid, the same standard readings apply, i.e., ten for each minim of Scarlet Solution No 1 five for each minim of Scarlet Solution No 2 and two and one-half for each minim of Scarlet Solution No 3. Unlike the procedure under the old method, this reading is not added to the previous reading for free acid but stands alone as the final estimate of the total acid in the specimen under examination. Thus, if in bringing about the change to scarlet the examiner used four minims of Scarlet Solution No 1, three minims of Scarlet Solution No 2 and one minim of Scarlet Solution No 3 the final reading for total acid would be  $57\frac{1}{2}$  or  $T = 57\frac{1}{2}$ .

The standard readings which form the basis of this method will be found to hold true in all instances provided the technician observes the following simple precautions. Care should be taken to use the same type and size of pipette for applying the neutralizer as is used in applying the specimen. Also, the technician should use pipettes whose tips are bent at a  $60^\circ$  angle for by holding these in a horizontal position the technician will always be able to obtain the same sized drops. Both the Yellow and the Scarlet

Solutions should be kept in brown bottles so as to prevent the light from affecting them. This will not prevent the technician from using these solutions as color standards for he will be able to observe the proper color in the transparent pipettes with which these solutions are applied. Both the specimen of the gastric content and the solutions should be kept at room temperature.

Summing up the advantages which are possessed by the Minim Method, I find that it is preferable to the other methods for the following reasons:

- 1 By combining the reagent and the neutralizer in one liquid, the necessity of separately applying the reagent is eliminated.
- 2 Because the Yellow Solution and the Scarlet Solution can be used as standards in determining whether the proper color has been obtained in the specimen under examination, the possibility of error in the readings due to faulty judgment of the color changes is reduced to a minimum.
- 3 The possibility of error due to too strong an application of the reagent to the specimen is eliminated by combining the reagent and the neutralizer in the proper proportions.
- 4 No filtration is now necessary as it is always possible to secure a number of clear drops of the specimen which do not contain any particles.
- 5 No matter how small a specimen is secured, it is now possible to make a complete qualitative and quantitative examination of the gastric content.
- 6 In a fractional examination, instead of removing five or ten c.c. at the various intervals, we need now only remove a few drops. In this fashion, we do not remove too much content from the stomach and thereby make our plotted curve a more accurate and reliable picture of the gastric digestion.
- 7 This method is more simple than the previous methods; less calculations are required and it does not involve any measurements. This fact is especially noticeable in the fractional examination when a series of tests is necessary.
- 8 Under the old method, even though the beaker used is carefully rinsed between successive tests some part of the content or neutralizer often remains with the result that the readings are affected. These possibilities of errors are eliminated in my method as an individual paper tray is used for each test.

## DIFFERENTIAL DIAGNOSIS IN PULMONARY DISEASES

(With Particular Reference to the Diagnosis of Pulmonary Tuberculosis)

BY MARK H. JORESS, M.D.\*

THE purpose of this paper is to review the various pulmonary lesions, and some non-pulmonary diseases which resemble tuberculosis,

and to cite several cases illustrating errors in diagnosis.

The diseases to be considered can be grouped as follows—

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Group I. Bronchitis, pneumonia, etc.



bronchial asthma, bronchopneumonia and lobar pneumonia, pulmonary fibrosis, and pneumoconiosis

Group II Neoplasm, cysts, mycosis, spirochetosis, and syphilitic lung

Group III This group, outside the lung fields, includes heart disease, thyroid disease, and accessory nasal sinus disease

**Bronchitis and Bronchiectasis** Chronic bronchitis, with a gradual dilatation of the bronchi, leads to the advanced condition of bronchiectasis and the formation of bronchiectatic cavities. The most common factors in etiology are a preceding pneumonia, influenza, and whooping cough. The latter, in particular, is responsible for many cases of bronchiectasis in children. The symptoms common to both conditions are cough, shortness of breath, pain in the chest, and expectoration. Expectoration is periodically profuse in a case of bronchiectasis, and usually of a foul odor. Bloody sputum occurs in both conditions, especially in bronchiectasis, where the amount of blood lost may even prove fatal.

Quite unlike the tuberculosis case, the patient with bronchitis does not show symptoms of a toxemia, and there is no loss of flesh. Save for the cough, which is annoying at times, these patients have no symptoms and go about their work as though nothing was the matter with them. Even the patient with bronchiectasis maintains his body weight and is not toxic, as a rule, in spite of the presence of pus in the bronchial tree. When, however, drainage of pus is interfered with and absorption takes place, a toxemia supervenes as evidenced by fever and malaise.

As for physical signs, the lung parenchyma shows no infiltrative changes, no dullness or changes in the respiratory note. The abnormal signs present are sibilant and sonorous rhonchi mixed with coarse mucous râles heard over one or both lungs, and usually limited to the base.

In the exceptional case of bronchiectasis accompanied by ulceration into the lung parenchyma dullness, bronchial breathing, and coarse mucous râles are the signs met with. These signs are basilar. A characteristic sign in bronchiectasis is clubbing of the fingers.

The tubercle bacillus is not found on smear, culture or guinea pig study of the sputum. The prevailing organisms are the influenza bacillus, the pneumococcus, and the staphylococcus. Lipiodol injected into the bronchial tree is of invaluable assistance in the diagnosis of a suspected case of bronchiectasis.

To summarize. A history of repeated attacks of bronchitis accompanied by profuse expectoration, particularly of a foul odor, negative for the tubercle bacillus, with clubbing of the fingers, with no signs of parenchymatous lung infiltration in a patient in good physical condition, warrants a diagnosis of bronchitis or bronchiectasis rather than tuberculosis.

**Lung Abscess** It is caused by aspiration of foreign bodies, is a complication of operative procedures, and is seen to follow in the wake of an unresolved pneumonia. Acute abscess is ushered in by pain in the chest, cough, fever, chills, sweats, and prostration. There is no expectoration until the abscess has ruptured into a bronchus, then foul sputum appears. The chronic abscess with adequate drainage may be devoid of symptoms other than cough and expectoration.

The cough in lung abscess is quite different from that in tuberculosis, it is explosive in character. Clubbing of the fingers is a prominent sign and appears quite early. Years may elapse before this sign is seen in tuberculosis, then usually in the far advanced case with cavity formation. The common seat of pathology in abscess is at the base, while in tuberculosis the upper portion of the lung is usually affected. Physical signs of abscess are dullness, bronchial breathing, and localized coarse râles.

The X-rays are of distinct aid in mapping out the exact location of the abscess. They likewise indicate the structure of the abscess, whether it is a single cavity or multilocular. The bacteria found commonly are pneumococci, streptococci, and staphylococci.

Summarizing, abscess is acute in onset, tuberculosis is insidious. The sputum is foul in the former and rarely so in the latter. Abscess usually elects a lower lobe while tuberculosis is most likely to involve an upper lobe or lobes.

**Bronchial Asthma** It is confounded with tuberculosis because of weakness, dyspnea, cough, expectoration, and occasional bloody sputum. Differential diagnosis rests upon the elimination of factors of allergy or septic foci responsible for bronchospasm.

As for physical signs, there is no evidence of infiltration of the lung parenchyma. Dullness and voice changes are lacking. The signs commonly elicited are emphysema, hyperresonance and sibilant and sonorous rhonchi ("wheezing") scattered throughout both lung fields. If asthma is superimposed upon a tuberculous process the latter may be readily overlooked. Signs of tuberculosis may be demonstrated only during a remission from bronchospasm.

**Bronchopneumonia and Lobar pneumonia** The similarity between these diseases and tuberculosis is very marked, but the clinical history is quite different. The former are acute in onset in a previously well person, whereas phthisis is insidious. The pneumonias are ushered in by a chill, accompanied by fever, headache, pain in the chest, dyspnea, and prostration. On the other hand, tuberculosis shows almost invariably a prodromal period with the following common symptoms: loss of strength and sustained endurance, loss of flesh, afternoon rise in temperature, indigestion and fatigue. The leucocyte count is usually high in pneumonia but rarely so in tuberculosis.

The characteristic physical signs in a bronchopneumonia are subcrepitant râles heard at both bases often associated with sibilant rhonchi. Tuberculosis, on the other hand, is confined usually to the upper lung fields with signs of dullness, increase in voice conduction, and râles. The signs of a lobar pneumonia are dullness, bronchial breathing, and if resolution has set in, râles, and with rare exceptions this pathology is confined to the base. The signs just described are occasionally met with in tuberculosis. We have then a tuberculous pneumonia. However the two may be separated readily when remembering that pneumonic phthisis has almost invariably an antecedent period of ill health which does not occur in a pneumonia.

*Pulmonary Fibrosis* This condition is seldom thought of although it bears a direct relationship to the last epidemic of influenza. The latter disease is responsible for a chronic lung fibrosis in the adult, and is observed to follow pneumonia and whooping cough in children. In a study of this condition Atkinson<sup>2</sup> has observed the following features: "Recurrent cough, worse in the winter months, always productive. Children seldom have foul sputum and never in large quantities. Temperature and pulse are normal and there is no tendency to lose weight."

As for physical sign both sides of the chest move equally, areas of dullness over one or both bases with râles confined usually to the base are the most frequent signs elicited. The upper lung fields show no dullness, voice changes, or râles which are the common signs in tuberculous disease.

Summarizing, these patients do not show the progression in their disease which we see in tuberculosis. As a rule, they appear in good health. The X-rays show exaggerated lung markings but these do not involve the apices or the lung periphery. Above all these patients date the onset of the present illness to a preceding influenza, pneumonia, or whooping cough.

*Pneumoconiosis* This disease is observed in stone cutters, fertilizer makers, and grain handlers. Silicosis, the most common of the entire group of dust diseases is an insidious fibrotic lung disease characterized by dyspnea, cough, and expectoration. The early silicotic lung changes are mild and are not recognized because there are slight or no symptoms present. As the disease progresses, with more and more of the lung alveoli impregnated with silicon particles, dyspnea sets in with a tendency to grow steadily worse. In time the lungs are invaded by pathogenic organisms and an infectious bronchitis is set up accompanied by malaise, loss of strength, and a variable degree of toxemia. The tubercle bacillus may become the invader and soon we have developed an "infected silicosis" as silicosis with phthisis superimposed upon it is called.

The physical signs of silicosis are variable<sup>3</sup>, there are areas of dullness, most commonly at the bases, with absence of breath sounds, as well as areas of bronchial breathing. Râles may or may not be heard. When present they are confined to the bases rather than the upper lung fields as seen in phthisis. As the disease progresses emphysema is rather constant. The latter physical finding is rarely seen in tuberculosis. Rather characteristic of silicosis is the nearly constant bilaterality of lung involvement.

When complicated by tuberculosis the diagnosis of silicosis is more difficult especially in the absence of a bacillary sputum. The X-rays may afford the most reliable data in establishing a diagnosis.

Summarizing, silicosis carries with it an occupational background of silicon dust. Physical signs in silicosis are usually basilar, tuberculosis elects, as a rule, an upper lobe. Areas of dullness with absence of breath sounds as seen in silicosis are not met with very commonly in tuberculosis infiltration. The presence of râles over the bases is the unusual finding in tuberculosis. Emphysema is a common sign in advanced silicosis and is rarely met with in tuberculosis. In a general way, in any patient with respiratory symptoms and an occupational background, that speaks for the inhalation of silicon laden dust, silicosis should be kept in mind.

*Neoplasm of Lungs* A neoplasm in this locality simulates tuberculosis very closely. The common symptoms observed by one group of writers<sup>4</sup> are: Chest pain, worse at night, cough, expectoration, dyspnea, hemoptysis, hoarseness, weakness, and loss of weight. The physical signs found by the writers mentioned are: respiratory lagging of the affected side of the chest, impairment of the percussion note or complete dullness. Breath sounds are diminished or completely absent. This absence of breath sounds is quite contrary to what we find in the average case of tuberculous infiltration. The signs elicited in neoplasm are confined most commonly to the region of the hilus or the base of the lung. The X-rays are of the utmost importance in the study of these cases<sup>5</sup> since the physical signs are inconstant and may occur in any part of the lung.

*Lung Cysts* The echinococcus cysts are the most common. The usual signs are diminished or absent breath sounds with dullness. The extent of the signs varies with the size of the cysts. They usually go unrecognized until they rupture into a bronchus when cough, purulent expectoration, and hemoptysis appear.

In contradistinction to the signs of diminished or absent breath sounds with dullness, tuberculosis almost invariably shows an increase in breath sounds when dullness is present. Then, again, the classical râles heard in the upper lung fields in tuberculous disease are not met with in cysts of the lung.

Eosinophilia is an important differential guide, whereas the isolation of the parasites' hooklets establishes the diagnosis

*Pneumomycoses and Bronchopulmonary Spirochetoses* These parasitic diseases of the lungs resemble tuberculosis so closely that the latter is the diagnosis commonly made. Castellani<sup>7</sup> says of these infections "In mild cases there are types of slight bronchitis with mucopurulent expectoration in which the fungi are found. In severe cases the patient presents symptoms suggesting phthisis with hectic fever and hemorrhagic expectoration." Diagnosis depends upon the isolation of the fungus or spirochete in question.

*Syphilitic Lung* The physical signs may be those of a pulmonary fibrosis or an ulcerative tuberculosis. In the former type the common symptoms are cough, mucopurulent expectoration, and dyspnea. In the latter variety, cough, purulent expectoration and hemoptysis occur. Differential diagnostic criteria are for syphilis, a positive Wassermann reaction in the absence of a bacillary sputum, and for tuberculosis, a negative history of primary or secondary specific lesions, negative blood, and positive sputum.

**THE NON-PULMONARY GROUP OF DISEASES**  
**1 Heart Disease** Under this heading are considered myocarditis with failing compensation and mitral stenosis. The following symptoms are common to both: cough, expectoration, dyspnea, digestive symptoms, and hemoptysis. The last symptom occurs more frequently in mitral stenosis. Symptomatically we are dealing with diseases which resemble tuberculosis very closely. However, there are no physical signs to be found consistent with parenchymatous lung changes. Râles, when present, are confined to the base. The X-rays throw much light on the pathology at hand: the lung parenchyma is clear, while the so-called "lung markings" are increased due to stasis in the pulmonary circulation. Moreover, a careful physical examination will reveal evidence of cardiac disease.

**2 Thyroid Disease** The toxic adenoma with symptoms of tachycardia, fatigue, nervous irritability, loss of weight, sweating, and fever simulates tuberculosis very closely. Though at times a patient with early phthisis may show an increased basal metabolism, the latter finding is a helpful guide to the diagnosis of thyroid disease. Moreover, the usual clinical manifestations of Graves' disease will point to the correct diagnosis. The lung parenchyma in thyroid disease shows no changes on physical examination or with the X-rays.

**3 Sinusitis** Chronic disease of the accessory nasal sinuses is frequently accompanied by lung infection resulting in bronchitis and even bronchiectasis<sup>8</sup>, with symptoms of cough, muco-

purulent expectoration, hemoptysis, and fever. The physical signs are confined to the base, though, rarely, apical changes take place suggesting a tuberculous process. Differential diagnosis rests upon negative signs for tuberculosis, absence of tubercle bacilli on smear, culture, and guinea pig inoculation<sup>9</sup>, and physical signs confined to the base with demonstrable paranasal sinus disease by the X-rays.

Having reviewed the various diseases resembling tuberculosis, let us consider a diagnosis of the latter. In this connection a carefully taken history is of the utmost importance. A history of contact with an open case suggests not only infection but potential disease as well. Though the manifestations of phthisis are variable, a history of loss of strength, lack of sustained endurance, a morning cough, indigestion, nervousness, and slight elevations in temperature are very suggestive. The symptoms just mentioned are not particularly striking, and are easily overlooked until some such episode as a hemoptysis takes place. Hemoptysis is one of the cardinal signs of phthisis.

Attacks of pleurisy unassociated with the acute diseases like influenza or pneumonia should be considered tuberculous in nature, and the patient should be observed for other evidence of phthisis. If an effusion accompanies an attack of pleurisy we have another cardinal sign of tuberculosis.

As for other symptoms. Though a loss of weight occurs in many other conditions, a steady loss of flesh deserves careful consideration. Night sweats are alarming to the patient. Hoarseness, because it is insidious as a rule, causes no alarm and is often overlooked unless it is part of a far advanced pulmonary lesion. This symptom may be due to a tracheo-bronchial gland enlargement with laryngeal nerve pressure, or is the result of a tuberculous laryngitis.

Physical signs in phthisis vary from such slight phenomena as suppressed breathing, slight increase in whisper and spoken voice, and harsh and prolonged expiration, to such marked signs of pulmonary infiltration as bronchial breathing with râles. Râles found above the third rib and fifth dorsal spine which do not clear up with cough constitute another cardinal sign of phthisis. Though the upper portion of the lung is the usual initial seat of tuberculous pathology, basal tuberculosis is not rare.<sup>10</sup>

A positive X-ray and positive sputum are the last two of the five cardinal signs of phthisis. The X-rays are of paramount importance in the study of border line cases, that is, those cases which have a suspicious symptom complex but no definite physical signs. They serve here as an aid in establishing a positive diagnosis. The isolation of the tubercle bacillus is proof positive of the disease, yet it is of value only in a positive way since many cases of manifest disease never show a bacillary sputum in the routine smear examinations.

# COMMENT

No doubt many cases are diagnosed as tuberculosis on insufficient evidence. It is equally true that many obvious cases are overlooked. It is at times very difficult to draw the line between the suspicious and positive cases especially in the absence of the cardinal diagnostic signs.

If differential diagnosis is entered into systematically, a diagnosis of tuberculosis can be made in the great majority of cases with a surprisingly small margin of error.

## REVIEW OF CASES

**CASE I** Male age 46, baker *F H* One sister died of tuberculosis *P H* Chronic catarrh *P I* In good health up to five weeks ago when he caught cold which was followed by fever, chills, pain in left chest, headache, cough, and expectoration. Fever left him at the end of a week, and he was convalescing. Admitted to the Rutland State Sanatorium with the following symptoms: cough, expectoration and pain in left chest on deep breathing. *P E* Pleural rub left base in back. Otherwise essentially negative. *Laboratory reports* Sputum negative on sixteen consecutive examinations. Smears of sputum showed gram positive cocci, large gram positive diplococci. *B* culture staphylococci and streptococci. *X ray report* Seventh interspace posteriorly on the left shows an irregular density. Apices and lung fields clear. *Impression* Unresolved pneumonia. Subsequent films showed a clearing up of the process. *Discussion* The man was in good health until he developed the acute respiratory illness. Fever subsided as suddenly as it came. The physical findings on entrance were those of a pleuritis. The negative apices and lung fields suggested a non-tuberculous lesion. The diagnosis of tuberculosis was made on insufficient evidence. *Discharge Diagnosis* Unresolved Pneumonia.

**CASE II** Male age 37, laborer, chronic alcoholic *F H* Negative *P H* Unknown illness at 19 years lasting three and one-half months accompanied by cough. Shortness of breath for many years. *P I* Steady hacking cough at times productive during past two years. Has had a scant amount of sputum, loss of strength and increasing dyspnea on exertion. On two occasions two months before admission raised a mouthful of blood. In the meantime expectoration was increasing, was more short of breath and cough was worse, especially at night. Has had night sweats and chills. Has lost eighteen pounds in weight. *P E* on entrance to the Rutland State Sanatorium. Orthopnea and moderate cyanosis. Well developed and well nourished. Chest heart enlarged, action regular but rapid, sounds weak and distant, and a systolic murmur present at the apex transmitted into axilla. Pulse of poor tension and volume. Lungs percussion note impaired over bases, no changes in breath sounds or voice conduction, numerous mucous rales over bases with and without cough. *Laboratory Reports* No tubercle bacilli found on twenty-four examinations of sputum. *X ray report* Heart shadow increased in its transverse diameter, bronchial tree prominent, bases hazy, upper lobes each lung clear. *Impression* Heart Disease. *Progress notes* Cough, expectoration and dyspnea subsiding under digitalis therapy. *Discussion* The alcoholic history in the case may be a factor in damaging the man's myocardium. He developed cough, expectoration, dyspnea and hemoptysis. Had sweats and chills. There was no evidence of lung infiltration. Thus far the myocardium

had been overlooked. The murmur at the apex was due to a mitral insufficiency induced by cardiac dilatation. The rales were due to passive congestion. The negative sputa, basal findings, X-rays negative for tuberculosis and the presence of abnormal heart signs were against tuberculosis. *Discharge Diagnosis* Myocarditis with broken compensation.

**CASE III** Female age 38, housewife, one child, no miscarriages. *P H* Measles, chicken pox, appendectomy and hysterectomy. Influenza 1919. *P I* Dates back to the influenza which left her with a persistent cough at times followed by the raising of large quantities of sputum, not foul. Has been a semi-invalid since the influenza. Five weeks prior to admission to the Rutland State Sanatorium cough and expectoration increased, began to lose weight and noticed fever and blood in the sputum on several occasions. *P E* Lungs showed dullness over bases with many coarse mucous rales. No evidence of infiltration over parenchyma of lungs. Rest of examination essentially negative. Temperature varied from 97° F to 100° F. *Laboratory Reports* Negative sputum on nineteen examinations. Sputum smears showed gram positive cocci, gram negative diplococci. Cultures of sputum Staphylococci, streptococci, gram negative diplococci (?m catarrhalis). *X ray report* Apices clear from sixth rib downward on the right are many white lines of fibrosis, all linear markings especially at the bases are thickened. Bony thorax at bases narrowed, upper thorax expanded. *Impression* Non-tuberculous lesion, probably due to an influenzal infection of long standing. *Progress Notes* Raised large quantities of sputum at all times. *Discussion* The history was atypical for tuberculosis and suggestive of bronchiectasis. No evidence of lung infiltration. Signs were basilar. There were large quantities of sputum, negative for the tubercle bacillus. The X-rays were negative for tuberculosis. *Discharge Diagnosis* Bronchiectasis.

**CASE IV** Male age 49, carpenter *F H* Negative *P H* Measles, whooping cough and scarlet fever. *P I* Influenza one year ago which left him coughing and weak. Eight months ago cough increased and he began to raise about four ounces of foul sputum each day. At the same time weakness increased, he began to have chills and night sweats. One month ago began to lose weight rapidly, fever and bloody sputum set in and began to have attacks of diarrhea. *P E* Entered sanatorium in a weakened condition, marked orthopnea and cyanosis. Persistent explosive cough accompanied by profuse foul expectoration. Marked clubbing of fingers. Chest barrel shape. Heart action poor and rapid, sounds feeble and distant. Blood pressure—90 systolic, 60 diastolic. Lungs upper lung fields showed no parenchymatous changes, dullness and pure bronchial breathing over the right base, many mucous rales over both bases. *Laboratory reports* Blood agar cultures of sputum staphylococcus albus, streptococcus anhemolyticus and a very minute gram negative bacillus with cultural and staining characteristics of the bacillus of influenza. Blood showed a marked secondary anemia. Tubercle bacilli not found on sixteen consecutive smear examinations.

*X ray Report* Opaque shadow right base consistent with abscess. *Discussion* The case suggested a non-tuberculous suppurative lesion. There were symptoms and signs of abscess. The sputum showed a mixed infection, one organism resembling the bacillus of influenzae. The X-rays showed abscess. The man was desperately ill and artificial pneumothorax, to collapse the abscess, was undertaken for palliation alone. A free pleural cavity was found and compression of the lung was very easy but was abandoned.

on account of the patient's poor condition. He showed a decline to a fatal termination. *Discharge Diagnosis* 'Lung Abscess

**CASE V** Male, age 38, travelling salesman *F H* Negative *P H* Typhoid fever at sixteen years, ill three weeks. Chancere at twenty nine. Recurring cough, hemoptysis, and "rheumatism" of nine years' duration. *P I* Felt well up to two years ago had since been "winded" and this condition was getting worse. Persistent cough past nine months accompanied by mucoid sputum mixed with blood. No loss of weight. *P E* Well developed and well nourished. Integument on upper lip showed several oozing lesions (? late secondary specific lesions). Chest thick no abnormal pulsations. Heart action rapid sounds weak and distant, no murmurs, no dullness over upper mediastinum. Lungs emphysematous scattering sibilant and sonorous rhonchi over left lung field dullness and harsh breath sounds over upper half each lung field with many fine and medium râles over these areas. *Laboratory Reports* Wassermann positive. *X ray report* 'Aortic arch abnormally broadened. Numerous calcified areas. *Impression* Aneurism and tuberculosis. *Progress notes* Lesions on lip and "rheumatism" cleared up following medication with saturated solution *K I* Wassermann negative after three treatments with salvarsan. The patient left the sanatorium after the last treatment. *Discussion* With the history of a primary specific lesion and symptoms of cough dyspnea and hemoptysis aneurism was suggested. The X ray pointed to tuberculosis as well as aneurism. However, in spite of the abnormal signs in the upper lobes consistent with a tuberculous process the good physical condition of the patient, and repeatedly negative sputum did not quite fit with a picture of clinical tuberculosis. Differential diagnosis rested between aneurism, syphilitic lung, and tuberculosis as a remote third. The presence of tuberculosis was at all times a matter of speculation. Clinically we were dealing with a case of syphilis complicated by lung changes compatible with a syphilitic fibrosis. *Discharge Diagnosis* 'Syphilis and ? syphilitic lung."

**CASE VI** Male, age 53, laborer *F H* Negative *P H* Unknown *P I* Began two years ago with loss of weight, and pain in left chest, at the base in front. Soon after he began to cough raising small amounts of thick, yellow greenish sputum often mixed with blood. Raised about two ounces of blood two weeks prior to entering the sanatorium. *P E* Marked emaciation. Cyanotic. No dyspnea. Numerous hard movable masses in anterior triangles of neck. Heart no abnormalities noted. Lungs

marked dullness over an area corresponding to the upper lobe left lung with many fine râles over this area. *Laboratory reports* No tubercle bacilli found on sixteen consecutive smears of sputum. Guinea pig negative for tuberculosis. Wassermann negative. *X ray report* 'Shadow of uniform density on left from sixth rib upwards. *Impression* Abscess." A film one month later showed an extension of the process. *Pathological report on biopsied glands of neck* "Carcinoma." *Discussion* Differential diagnosis in this case rested between neoplasm, abscess and tuberculosis as a distant third. This case illustrates how easy it is to fall into the error of considering upper lobe pathology in the presence of cardinal symptomatology as due to tuberculosis. The man died two months after admission. *Discharge Diagnosis* "Neoplasm of lung"

### SUMMARY

- 1 The numerous pulmonary lesions have a marked similarity and resemble tuberculosis very closely
- 2 By a process of elimination a diagnosis of tuberculosis can be made in the great majority of cases with a very small margin of error
- 3 Differential diagnosis in pulmonary diseases confers a great burden of responsibility upon the physician in general and the specialist in particular

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## THE INTERPRETATION OF APICAL RÂLES IN PULMONARY TUBERCULOSIS

BY RANDALL CLIFFORD, M D \*

**I**N the minds of many physicians, the presence of persistent fine apical râles is considered sufficient evidence to warrant making a diagnosis of activity in pulmonary tuberculosis. The prevalence of this opinion will be realized when one considers, for example, that during the World War, in the examination of the National Army for tuberculosis, before going overseas, "the detection of persistent râles at or near the apex of the lungs was considered one of, if not

the physical sign which called for rejection, although the soldier might have been in good physical condition otherwise, and with no evidence of general infection."

That the interpretation of the clinical significance of persistent fine apical râles in cases of pulmonary tuberculosis is not, however, as simple a matter as the above would suggest has been clearly brought home to me during the past four years of work in the Pulmonary Clinic of the Massachusetts General Hospital. There has been a striking group of patients who have

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come into the Clinic with a history of having had pulmonary tuberculosis of many years' duration. They present no evidence of any clinically active tuberculosis, are able to work without detriment to their health, and the X-ray picture is that of an old healed lesion, yet on repeated examinations of these cases definite fine persistent râles are heard at one or both apices, the character of these râles being indistinguishable from those accompanying an active process. In following these cases over long periods of time, during which on reexamination these râles persisted, it became apparent that the râles were not in themselves evidence of active tuberculosis, and that, although similar in character to those accompanying active lesions, their method of production must be different and capable of some other explanation.

The generally accepted explanation for the production of the fine apical râles associated with pulmonary tuberculosis has been that they were vibrations caused by the currents of air passing along the respiratory passages to the air cells and meeting partial resistance, the resistance being that of fluid, mucus, or pus, the exudation being based on the inflammatory reaction of the tubercle. Therefore, as it was thought that a definite fluid medium was necessary for the production of these râles, some inflammatory process must be present to cause this fluid, and on the assumption that all râles are based on an inflammatory reaction, it was believed that fine râles heard at an apex in a case of tuberculosis must mean active disease. This however, is in my opinion a wrong interpretation.

Very little has been written relative to the significance and method of production of these fine crepitant râles heard at the apices of the lungs in cases of healed tuberculosis.

Ringer<sup>2</sup>, in describing the clinical criteria of activity in pulmonary tuberculosis, states that "the moist râle has ever been the one that is held to betoken activity. It matters not whether it be a fine or a coarse moist râle. None the less, it is an indisputable fact that moist râles, not sibilations or large rhonchi, but true moist râles denote an active process." Other writers however take issue with this view.

Riviere<sup>3</sup> mentions having had many cases under observation which had been long arrested but where crepitations remained. In some cases they were but the dry crackles of expanding lung but in others the crepitations were somewhat moist and were due, he felt, to dilated bronchioles over a contracting fibroid area.

Amberson<sup>4</sup> in studying the healing of pulmonary deposits finds "a surprising behavior of râles. Other signs, such as adventitious breath and voice sounds, usually change toward the normal as one would expect with the disappearance of pulmonary condensations but often the distribution of râles remains as it was originally. Sometimes râles decrease, to correspond with the clearing of roentgenograms, but sometimes they

persist over extensive pulmonary areas from which absorption of infiltration has occurred, and in which the roentgenographic markings are within the accepted normal limits." He gives a most interesting case in which râles persisted for more than five years after healing was well established, with a gradual clearing of the X-ray picture, they were definitely moist intrapulmonary râles elicited by cough and at times heard during quiet breathing. In discussing an explanation for these râles, he is of the opinion that the matter is very problematical, but feels that they may be due to catarrhal bronchiolitis or to a slight bronchioectasis, as suggested by Riviere, or to "some mechanical barrier to the blood or lymph drainage of the finer anatomic structures."

Lowenhjelm<sup>5</sup> remarks that at necropsy of persons with healed tuberculous processes, dying from other causes, more attention should be paid to the history of persisting râles. He describes three cases in which the clinical cure had been doubted on account of râles continuing to be heard, but in which necropsy confirmed the complete cure of the old pulmonary lesion. He found in one case that the lumen of the bronchus was unusually large and the sclerous apex was clogged with desquamated epithelium, thus providing the physical conditions for the râle production. He declares that we are inclined to attach too much importance to persisting râles.

Bruns<sup>6</sup> believes that the class of râles elicited by expiratory cough and inspiration and commonly regarded as an important sign of chronic parenchymatous tuberculous lesions are not, as generally believed, produced by moisture or secretions in the terminal bronchioles, but that "their production seems to depend on a certain degree of collapse of the secondary lung lobules, furthermore, that these râles, while usually regarded as typical of tuberculosis, may be present without active lesions, and therefore they cannot be accepted as conclusive evidence of active or even manifest tuberculosis unless supported by other findings." In describing these râles, Bruns states that they are small or medium but uniform in size and occur in showers at the same phase of respiration and are encountered in all types of tuberculosis. In concluding he remarks that "the significance of these râles as a criterion of manifest tuberculosis and the character of the lesions will depend on other clinical findings—history, symptoms, sputum, roentgen-ray examination. A period of observation may be necessary in order to arrive at a definite diagnosis."

We cannot say at the present time whether the true physiology of persistent apical râles unassociated with any symptoms is based upon fibrosis, bronchial obstruction, or some other factor. It would seem to me that the manner of production of these fine râles occurring in cases of long standing tuberculosis must be different from those accompanying active lesions.

When the disease is active, we can logically assume that the moisture in the bronchial tubes giving rise to the râles is secondary to some inflammatory process. On the other hand, where healing has taken place and no acute inflammatory condition exists, some explanation other than moisture in the bronchial tubes must be sought. The primary clinical problem, however, is not so much how these râles are produced as the determination of whether or not they should necessarily be considered proof of activity in the absence of other factors. It is my opinion that persistent fine apical râles alone, in the absence of symptoms, are not sufficient to warrant making a diagnosis of activity in pulmonary tuberculosis. The following cases, seen in the Pulmonary Clinic of the Massachusetts General Hospital, illustrate this point of view.

**CASE I** A man of forty five entered the Pulmonary Clinic in 1927 for examination of his lungs. He gave a history of having been examined in the Out Patient Department in 1920, when a diagnosis of pulmonary tuberculosis was made and he was sent to a sanatorium where he stayed for a year and left against advice. He had then gone to work and had been working ever since without any apparent symptoms. Before entering the Clinic in 1927, he had seen a doctor, who, finding râles at the right apex, thought that he had active disease and advised that he return to the sanatorium. The examination in the Pulmonary Clinic showed him symptom free, but with definite râles at the right apex with and without cough. The X ray showed practically no change from that taken in 1920. After following his case for several months and finding that he was able to work without any symptoms in spite of these râles heard at each examination, I told him that I thought the disease was not active and advised that he continue his work which he had done for the past six years without any ill effect. The case of this man, entirely without symptoms and showing no progression of the lesion by X ray in seven years, who yet because of fine apical râles was told that he had active disease and needed sanatorium treatment, illustrates very clearly the value of following such a case closely before deciding whether or not the râles indicate active disease.

**CASE II** A woman of fifty two entered the Out Patient Department in 1913. At that time, dullness and fine râles were found at the right apex; the sputum was positive and a definite diagnosis of active pulmonary tuberculosis was made. When she returned in 1919, dullness and râles were still found at the right apex, but the disease was no longer considered active. In 1925, she came into the Pulmonary Clinic and again dullness and râles were found at the right apex; the X ray showing a diffuse bronchial and peribronchial process affecting both lungs, with evidence of fibroid changes at the right apex; that same year she had a gall bladder operation without any apparent setback. In 1927 she again came into the Clinic, giving a history of essentially no constitutional symptoms in view of the absence of symptoms and the long duration of the physical signs. I believed that the râles heard at the right apex although indistinguishable from those which accompany an active process, were based on fibrosis and were not indicative of activity, and my diagnosis was chronic fibroid phthisis. This is a case in which for fourteen years fine râles at the right apex were heard at varying intervals by different observers

yet the patient apparently continued in perfectly good health and without any symptoms.

**CASE III** A woman of thirty-one entered the Out Patient Department in 1923. She had a slight cough with apparently no other symptoms, her lungs showed dullness at the right apex to the mid scapula with increased breath sounds and fine râles after cough, the X ray showed mottled dullness at both apices, consistent with tuberculosis. She gave a very strong family history of tuberculosis, and had been for four months in a sanatorium which she had left against advice. She entered the Pulmonary Clinic, where she made eleven visits between November, 1924, and October, 1926 at each examination, definite fine râles were heard at the right apex. The X ray taken in 1924 was similar to that taken in 1923, but showed some calcified areas and mottling at both apices. In 1925 she became pregnant and was advised to go to the Lying In Hospital. She next appeared at the Clinic in 1926, saying that her child had been born seven months previous; she was feeling extremely well, but examination still showed the same râles at the right apex. The fact that she went through a pregnancy without any change in her lung condition is good evidence that the râles in this case were not associated with an active lesion.

**CASE IV** A woman of forty entered the hospital in May, 1923, when a diagnosis of inactive pulmonary tuberculosis was made. She gave a history of having been at a sanatorium fourteen years ago; the physical examination showed a few fine râles at the right apex after cough with slight dullness and increased breath sounds, and the X ray showed mottling at the right apex. In October, 1925 a doctor saw her and thought that she ought to go back to the sanatorium. She came to the Pulmonary Clinic for the first time in December, 1925 at this time the X ray showed evidence of fibrosis at the right apex and many small calcified areas which probably represented an old healed tuberculous lesion. She has since made numerous visits to the Clinic, and at all times definite fine râles have been heard at the right apex, although she has been working without any undue fatigue and has gained in weight. This case emphasizes the difficulty in interpreting the significance of apical râles for unless one had followed the case for a certain length of time and had carefully noted the absence of any symptoms one might have been inclined to consider the disease as active on the basis of the physical signs alone, in fact, we note that although she has apparently been perfectly well ever since leaving the sanatorium yet on the basis of râles at the right apex a doctor who saw her in 1925 felt that the disease was active and advised that she return to the sanatorium.

**CASE V** A woman of twenty five entered the Clinic on September 2, 1925, for the question of her fitness for an operation for prolapse of the uterus. Three years earlier she had been seen in the Out Patient Department, when the physical examination showed dullness at both apices, increased voice and breath sounds and fine râles at the left apex after cough. The X ray showed evidence of calcification in the peribronchial structure on the left side and considerable fibrosis and retraction of the mediastinal contents toward the left; a diagnosis of moderately advanced tuberculosis was made and she was advised to go to a sanatorium. At the time of her entrance to the Pulmonary Clinic in 1925 she gave a history of having raised a little blood about three years previous; otherwise her history was essentially negative, and the X ray showed no appreciable change from the one taken in 1922. The examination showed dullness at the left apex front and back with numer-



ous fine râles and in spite of no elevation of temperature or toxemia I advised against an operation at that time on the basis of these râles. The operation was accordingly postponed. Nine months later she came in again showing practically the same signs and with no change in the X-ray. I changed my opinion in regard to the operation feeling that these râles at the left apex having persisted since 1922, did not in the absence of toxemia mean an active tuberculous process and that I therefore was not justified in advising against an operation on this evidence alone. The patient was accordingly operated upon and suffered no ill effect or reactivation of the process.

CASE VI. A plumber of thirty-eight first entered the hospital in 1920 when evidence of an old right apical involvement was found but there were no signs of activity. The X-ray showed mottled dullness extending from both lung roots toward the apices on the right, these changes reached the periphery of the lung. The findings were typical of tuberculosis and in 1921 he went to a sanatorium. In 1925 he entered the Pulmonary Clinic saying that he had been working for the past six months as a plumber and had been feeling well. The physical examination showed dullness at the right apex with a few fine râles after cough. The sputum examination for tubercle bacilli was negative. He has been followed in the Pulmonary Clinic since 1925 being last examined on March 30, 1927 and on all of these examinations definite fine râles have been heard at the right apex. He has gained five pounds in weight has had no night sweats or other symptoms and the 1927 X-ray plate shows the same picture as did that taken seven years ago in 1920. The presence of persistent fine râles occurring on examination for he past two years and in all probability since 1920 brings up the question as to whether or not this case is active. In my opinion the facts that he has been working as a plumber without physical detriment, that the X-rays taken in 1925 and 1927 show no marked changes from those taken in 1920 and that constitutional symptoms are absent are sufficient evidence to warrant diagnosing this case as quiescent, even in the presence of persistent fine râles at the right apex.

I feel sure that there are many tuberculous patients being treated as confirmed invalids merely because of the misinterpretation of persistent fine râles at an apex. There are physical signs in the chest which may be of the greatest significance in one instance and may mean very little in another, depending upon the ability or inability of the patient to carry on his normal activities in life. Dr E. O. Otis speaks of this as follows: "It is true that in the greater number of cases when râles are present at one or the other apex there are co-existing symptoms of a general infection and the râles are the local evidence of the constitutional disturbance. It is

the toxæmic symptoms that are the indication of the active disease, not the râles. When, therefore, all evidence of tuberculous toxæmia has disappeared, but the râles remain, they then indicate only what has happened, and one should bear this in mind in forming an opinion upon the progress of a case under treatment. Of course one may say that as long as râles remain, the disease is only quiescent and toxæmic symptoms may appear at any time when the patient is under stress. This, indeed, may happen, but on the other hand it may not, and the test is the continued physical activity of the patient, and when this takes place without detriment, the disease may be considered as permanently arrested."

Fine râles at an apex in long-standing cases of pulmonary tuberculosis do not *alone* prove activity or the reactivation of an old process. A man may have a healed scar in his lung which never has caused him inconvenience and probably never will, and to deprive such a man of his occupation and disrupt his family life on the sole finding of fine râles at an apex, unaccompanied by symptoms may have consequences as serious as might a failure to recognize the significance of such râles in an early case.

#### CONCLUSION

- 1 Symptoms are more important than physical signs in judging activity in pulmonary tuberculosis.
- 2 Fine apical râles may persist for long periods of time in cases of healed tuberculosis.
- 3 I believe that fine apical râles are not necessarily dependent for their production on moisture in the bronchi, secondary to an inflammatory reaction in the lung, but are in many instances due to collapse of the lung lobules.
- 4 Persistent fine apical râles alone, in the absence of symptoms, are not sufficient to warrant making a diagnosis of activity in pulmonary tuberculosis.

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When the disease is active, we can logically assume that the moisture in the bronchial tubes giving rise to the râles is secondary to some inflammatory process. On the other hand, where healing has taken place and no acute inflammatory condition exists, some explanation other than moisture in the bronchial tubes must be sought. The primary clinical problem, however, is not so much how these râles are produced as the determination of whether or not they should necessarily be considered proof of activity in the absence of other factors. It is my opinion that persistent fine apical râles alone, in the absence of symptoms, are not sufficient to warrant making a diagnosis of activity in pulmonary tuberculosis. The following cases, seen in the Pulmonary Clinic of the Massachusetts General Hospital, illustrate this point of view.

**CASE I** A man of forty five entered the Pulmonary Clinic in 1927 for examination of his lungs. He gave a history of having been examined in the Out Patient Department in 1920 when a diagnosis of pulmonary tuberculosis was made and he was sent to a sanatorium, where he stayed for a year and left against advice. He had then gone to work and had been working ever since without any apparent symptoms. Before entering the Clinic in 1927 he had seen a doctor, who finding râles at the right apex thought that he had active disease and advised that he return to the sanatorium. The examination in the Pulmonary Clinic showed him symptom free, but with definite râles at the right apex with and without cough. The X-ray showed practically no change from that taken in 1920. After following his case for several months and finding that he was able to work without any symptoms in spite of these râles heard at each examination, I told him that I thought the disease was not active and advised that he continue his work which he had done for the past six years without any ill effect. The case of this man, entirely without symptoms and showing no progression of the lesion by X-ray in seven years who yet because of fine apical râles was told that he had active disease and needed sanatorium treatment illustrates very clearly the value of following such a case closely before deciding whether or not the râles indicate active disease.

**CASE II** A woman of fifty two entered the Out Patient Department in 1913. At that time dullness and fine râles were found at the right apex; the sputum was positive and a definite diagnosis of active pulmonary tuberculosis was made. When she returned in 1919, dullness and râles were still found at the right apex but the disease was no longer considered active. In 1925 she came into the Pulmonary Clinic and again dullness and râles were found at the right apex; the X-ray showing a diffuse bronchial and peribronchial process affecting both lungs with evidence of fibroid changes at the right apex. That same year she had a gall bladder operation without any apparent setback. In 1927 she again came into the Clinic, giving a history of essentially no constitutional symptoms in view of the absence of symptoms and the long duration of the physical signs. I believed that the râles heard at the right apex although indistinguishable from those which accompany an active process, were based on fibrosis and were not indicative of activity and my diagnosis was chronic fibroid phthisis. This is a case in which for fourteen years fine râles at the right apex were heard at varying intervals by different observers

yet the patient apparently continued in perfectly good health and without any symptoms.

**CASE III** A woman of thirty-one entered the Out Patient Department in 1923. She had a slight cough with apparently no other symptoms, her lungs showed dullness at the right apex to the mid scapula with increased breath sounds and fine râles after cough; the X-ray showed mottled dullness at both apices, consistent with tuberculosis. She gave a very strong family history of tuberculosis and had been for four months in a sanatorium which she had left against advice. She entered the Pulmonary Clinic, where she made eleven visits between November 1924 and October, 1926 at each examination, definite fine râles were heard at the right apex. The X-ray taken in 1924 was similar to that taken in 1923, but showed some calcified areas and mottling at both apices. In 1925 she became pregnant and was advised to go to the Living In Hospital. She next appeared at the Clinic in 1926, saying that her child had been born seven months previous; she was feeling extremely well but examination still showed the same râles at the right apex. The fact that she went through a pregnancy without any change in her lung condition is good evidence that the râles in this case were not associated with an active lesion.

**CASE IV** A woman of forty entered the hospital in May, 1923, when a diagnosis of inactive pulmonary tuberculosis was made. She gave a history of having been at a sanatorium fourteen years ago. The physical examination showed a few fine râles at the right apex after cough with slight dullness and increased breath sounds and the X-ray showed mottling at the right apex. In October 1925 a doctor saw her and thought that she ought to go back to the sanatorium. She came to the Pulmonary Clinic for the first time in December, 1925 at this time the X-ray showed evidence of fibrosis at the right apex and many small calcified areas which probably represented an old healed tuberculous lesion. She has since made numerous visits to the Clinic and at all times definite fine râles have been heard at the right apex, although she has been working without any undue fatigue and has gained in weight. This case emphasizes the difficulty in interpreting the significance of apical râles, for unless one had followed the case for a certain length of time and had carefully noted the absence of any symptoms one might have been inclined to consider the disease as active on the basis of the physical signs alone. In fact, we note that although she has apparently been perfectly well ever since leaving the sanatorium yet on the basis of râles at the right apex a doctor who saw her in 1925 felt that the disease was active and advised that she return to the sanatorium.

**CASE V** A woman of twenty five entered the Clinic on September 2, 1925 for the question of her fitness for an operation for prolapse of the uterus. Three years earlier she had been seen in the Out Patient Department, when the physical examination showed dullness at both apices, increased voice and breath sounds, and fine râles at the left apex after cough. The X-ray showed evidence of calcification in the peribronchial structure on the left side, and considerable fibrosis and retraction of the mediastinal contents toward the left. A diagnosis of moderately advanced tuberculosis was made and she was advised to go to a sanatorium. At the time of her entrance to the Pulmonary Clinic in 1925 she gave a history of having raised a little blood about three years previous otherwise her history was essentially negative and the X-ray showed no appreciable change from the one taken in 1922. The examination showed dullness at the left apex front and back, with numer

reduce the danger of serious retrogression when changes occur in the personnel of the public health board or department, such as seem inevitable from time to time under present political conditions. It serves as an organ of continuity of objectives and standards, by creating a continually informed public opinion which demands efficient results from whatever administration or officials occupying the executive positions. The voluntary health organization gives a type of publicity to the work of the official health board or department that the latter itself cannot obtain without embarrassment. It interprets the board's or department's work to the people as citizens and taxpayers; it builds up for it an increasing fund of good will and favorable sentiment, and thereby wins for the official board or department increased public recognition and support.

The voluntary, unofficial tuberculosis associations are for the most part made up of sincere, sensible, disinterested, public spirited physicians and lay persons, bankers, industrialists, merchants, trade union representatives, club women, persons who are genuinely concerned about the advancement of the public health and welfare. In the earlier years of the tuberculosis movement it was not uncommon to find public health officials, particularly the more smug and self-satisfied kind, looking upon the voluntary, unofficial tuberculosis associations as made up of "long haired men and short haired women", impractical, visionary enthusiasts, always poking their noses into somebody else's business, vain-glorious seekers of place and publicity for themselves. But this concept almost everywhere has passed away in the face of the practical demonstration by the voluntary organizations of the value of their cooperative services to the official health authorities.

Certain expedients have been found useful for facilitating and maintaining effective working relations between official and non official health agencies. Among them are the following:

(a) The voluntary health agency invites the official health board or department to designate its chief executive officer to become a member ex-officio of the board of directors, or executive committee of the voluntary health association.

(b) The official health board or department persuades the governor of the state or the mayor of the city as the case may be, to appoint a leading member of the voluntary health association to membership on the advisory board which nowadays almost every official health agency has.

(c) The voluntary health agency submits its tentative program of work to the official agency for information and suggestions, though not for approval.

(d) The official health agency endorses the voluntary health organization's program of work and its campaign for the raising of funds for the support and execution of its program.

(e) The voluntary health organization tenders to the official health board or department its good offices in creating such public sentiment as will help the official health board or department to secure necessary legislation or increased appropriations of public moneys for its work.

(f) In addition to reciprocal ex-officio representation mentioned in (a) above, frequent conferences are held between heads of divisions or bureau chiefs who are engaged in similar phases of public health work. This tends to improve team play all along the line, and to head off possible troubles that might develop between subordinates of the two agencies.

The official health agency is from every point of view the responsible head of the work. It has been set up by the constituted authorities and is supported by the taxes levied on the citizens of the community to discharge the duty of protecting the health of the general public. It has no choice as to the kind or degree of responsibility it will assume. It is all its responsibility. The constituted legislative authorities have seen to that. It is, therefore, plain that the place in the picture of the voluntary unofficial agency is that of an aide and supporter of the official health agency in every move that the latter makes for the public's benefit. The official health agency is the spear head of the drive, behind it is the informed, earnest, active group of public-spirited men and women physicians and lay persons, who constitute the voluntary health agency and who represent enlightened public opinion.

The ideal combination in my opinion, is that of the official health agency and the non-official one working in close cooperation but with a clear distinction between them. If the non-official agency is in any very material respect closely bound up with the official health agency—if for example, one or more of the chief executive officers of the official health agency are also among the principal officers of the voluntary health agency, as well as on the staff of the official health agency, the voluntary health organization loses its identity in the public mind and in effect becomes a mere adjunct to the official board or department. Such a close affiliation deprives the voluntary health organization of its independent, disinterested character, its initiative and freedom of action are stifled. It really deprives the official health board or department of the peculiarly unique and valuable assistance that the voluntary health organization can render to the official health agency.

Another fundamental policy to be adopted by the voluntary unofficial tuberculosis association is the securing of a friendly understanding, good will and cooperation on the part of the medical profession. The variety and extent of anti-tuberculosis measures have increased greatly in recent years, in common with other lines of preventive health work. Naturally the points of contact between anti-tuberculosis agencies and

## MASSACHUSETTS TUBERCULOSIS LEAGUE

FUNDAMENTALS IN TUBERCULOSIS WORK WITH RESPECT TO  
VOLUNTARY UNOFFICIAL ASSOCIATIONS\*

BY GEORGE J. NELBACH†

**T**HE subject of this paper will be discussed under two general heads (1) fundamentals with respect to policies, (2) fundamentals in regard to programs of work

One of the fundamental policies with respect to voluntary tuberculosis associations is that these organizations should seek to promote and secure mutual understanding, friendly appreciation and cooperation with the constituted public health authorities, state and local. To this end there needs to be a due recognition by each group of the other's basic character and organization

First, as to the state and local health authorities. They are the agencies of government. They represent all the people. They are created to carry out the will of the people, as expressed in statutes, charters, codes, ordinances, rules and regulations. They spend public moneys which all the people provide directly or indirectly through the taxes that are imposed by the people's law-making and tax-levying representatives in government.

Under the system of self-government prevailing in our country, the people have established certain limitations and checks upon the powers and duties of those whom they have selected as their agents in public office, and the official health authorities, whether state or local, are subject to these checks and limitations. For example, their tenure in office is fixed usually for a specified term—generally two years, sometimes three occasionally four years, rarely more than that, though the trend is in that direction. Whether they shall be re-elected or re-appointed to office is subject, directly or indirectly, to the will of the people, and sometimes the public is capricious in expressing its will. This insecurity as to tenure in office deters many from entering into official public health work as a career. Powers and duties of public health officials are defined and prescribed by state statutes or city charters, and beyond these provisions they cannot go. They can only spend the moneys that are appropriated to them for the particular purposes that are specified and not otherwise. They are subject to minute regulations as to budget making, to manner of expenditure of public funds, and as to accounting therefor.

Appointments to subordinate positions are usually subject to civil service rules, which may possibly be interpreted or administered by un-

interested or unsympathetic civil service officers. It occasionally happens that a particular health administration inherits from a preceding one a group of subordinates of an inferior type, appointed when a lower standard of duty and work were required, and who are protected by civil service regulation. Such subordinates can only be removed on charges and after a hearing. The personnel of such official health agencies can not for the most part be "hired and fired" like those of the voluntary, unofficial tuberculosis agencies.

Such limitations as these often inhibit the initiative and thwart the enterprise of public health officials, state and local, and condition the extent and character of their work. It is well for the voluntary health agencies to recognize these handicaps and to make allowance for them. For the past twelve years experience everywhere in this country indicates that a voluntary health organization, parallel with the official health authority, is an indispensable means for building up modern official health work and keeping it at a higher standard. Theoretically, the will of the people is expressed in laws and public institutions. In matters relating to sanitation and public health, however, there is little public opinion because the mass of the people are largely without much knowledge of the subject. Under these circumstances a disinterested voluntary organization, expressing the consensus of opinion of physicians and others already interested in public health, is an invaluable nucleus for the development of a wider public knowledge and concern, and for carrying on from time to time some of the newer activities in public health until their practicability and usefulness are demonstrated, public interest in them aroused, and a desire on the part of the public to provide for their support by taxation is developed.

The voluntary health agencies have considerable freedom of action, including, among other things, the raising of money, the spending of money and the employment and dismissal of members of their staffs. They also have considerable elasticity as to function, it is relatively easy for them to change their programs of work, their functions are not minutely prescribed by statute. In fact only such voluntary health agencies as are incorporated have their functions prescribed legally, and as to these agencies, wide latitude is usually permitted them in the interpretation and exercise of these functions.

The voluntary health organization helps to

\*Remarks made before the Annual Meeting of the Massachusetts Tuberculosis League, Springfield, Mass., April 30, 1923.

†For record and address of author see "This Week's Issue" page 966.

(a) Accept the invitation from the voluntary tuberculosis association to designate certain of its members to serve as members ex-officio on the board of directors or executive committee of the association

(b) Study and consider any program of activities that may be referred to it by the tuberculosis association for information and suggestions, and, if such program is approved, make a public statement to that effect, and otherwise support the program so approved

(c) Appoint a special committee on public relations to confer from time to time with a similar committee appointed by the voluntary tuberculosis association on matters of mutual interest to both agencies

(d) Report to the State Medical Society any matter as to which an accord has not been reached with the tuberculosis association, in the hope that through conference between the State Medical Society and the parent body of the tuberculosis association any such matter may be negotiated and adjusted to the mutual satisfaction of all concerned

A substantial number of the county medical societies and voluntary tuberculosis associations have acted affirmatively on these suggestions, and it is believed that more of them will do so

As to the tuberculosis program, it is funda-

mentally important that it should be soundly conceived. It should have a scientific foundation, and should meet the needs of a particular situation in the state or in a given locality within the state, at a particular time. Fortunately there is but little likelihood of any state tuberculosis association or similar local association going wrong that is to say, undertaking relatively unfruitful, ineffective lines of anti-tuberculosis endeavor, if it will but follow the suggestions as to program making that have been evolved out of the experience of the past 25 years of work in this field throughout the country, and as formulated by the National Tuberculosis Association. The Board of Directors of the National Association has from time to time studied the relative value of the various lines of anti-tuberculosis work such as survey, education of the public, legislation, clinic, sanatorium, public health nursing, preventorium, open air school, charitable relief, post sanatorium care. Its recommendations with respect to these activities have been issued formally to the 48 State Tuberculosis Associations, and through them to their 1500 or more county or city branches. The recommendations with respect thereto are to be found year after year in the annual contract which these agencies execute among themselves with respect to the sale of the tuberculosis Christmas Seals, the device by which these Societies finance their activities

medical practitioners and medical societies have increased greatly. Sometimes these points of contact have become points of friction. The more intensive and comprehensive the health activities, the greater has been the likelihood of friction.

Sometimes physicians have complained that tuberculosis agencies offer medical examinations and services free of charge at clinics which the patients should receive through their physicians on a professional basis, that tuberculosis work has not always been wisely planned, nor conducted on sound scientific principles, and that tuberculosis work along with other health services is leading up to state medicine.

On the other hand, health and tuberculosis workers here and there have complained that physicians have been holding aloof from their natural place in health work, that they have condemned health activities without taking the trouble to understand them and on inaccurate information, that preventive tuberculosis work should not be put on the same economic basis as the treatment of the indigent sick, and that instead of leaning toward state medicine the progressive development of tuberculosis and other activities tends to lessen the need for any public system of medical practice.

The situation, it seems to me, is one calling for patient, thoughtful, forbearing consideration of the whole general subject. Progress will not be made by strife and contention between the medical profession and public health work. More light and less heat is what is called for.

In New York State the conviction has gained ground that the difficulties may be due to the fact that the relations of modern health activities to the medical profession present a relatively new subject to which no one has as yet given serious study. Two years ago it seemed worthwhile to a group of physicians and laymen to give very detailed consideration to just what part the medical profession in a given locality as an organized group and as individuals can play, actually and practically in the health activities of that community, and as to what procedures and relationships between health and medical agencies would be likely to lead to a mutual understanding, based on actual and detailed information. It was felt that if there were underlying conflicts of interest, such mutual consideration would at least bring them to light and narrow the discussion to actual realities instead of vague generalities and loose terms. A series of informal conferences was held, and these were succeeded by a series of formal ones between specially appointed committees of the State Medical Society and of our State Committee on Tuberculosis and Public Health.

Of course, there were plenty of differences of opinion among the two groups as various steps were taken up, but seldom were the State Medical Society's representatives on one side of a particular question, and all those of our State

Committee on Tuberculosis and Public Health on the other. The discussion was entered into with good will on the part of all, with an earnest effort to learn what the facts really were, and to arrive not simply at a *modus vivendi* for the time being, but at a well considered and statesmanlike handling of the subject. The result was a unanimous report dealing with general considerations as to the relations between medical organizations, and voluntary tuberculosis and health agencies, and suggestions in detail as to the operation of various health activities. The report was submitted informally for suggestions and comments to the various state authorities concerned, the State Commissioner of Health, the State Commissioner of Mental Hygiene, and the head of the School of Health Service in the State Department of Education. Some valuable suggestions were received and the comment was entirely favorable. In May 1927 the report was adopted by the parent bodies of both committees—the State Medical Society and the State Charities Aid Association. The report was printed in full in the *State Medical Journal*, issue of July 15, 1927, the official publication of the State Medical Society, and in the *S. C. A. A. News*, issue of July 1927, the Bulletin of the State Charities Aid Association.

The report, of course, is too long to be set forth within the compass of this paper. However, it may be useful to give at this point the suggestions that were arrived at as to relations that should in our opinion be set up between medical organizations and voluntary tuberculosis associations.

The following suggestions were made to the voluntary tuberculosis associations:

(a) Invite the County Medical Society to designate a certain number of its members, say two, to become members *ex officio* of the tuberculosis association's board of directors or executive committee, if there be one.

(b) Lay its annual program of activities before the County Medical Society for information and suggestions.

(c) Appoint a special committee to confer with a similar special committee appointed by the County Medical Society about matters that come up from time to time in which both groups are mutually interested.

(d) Report to the parent body of the voluntary tuberculosis association any matter as to which an accord has not been reached with the County Medical Society, in the hope that through conference between the parent body of the tuberculosis association and the State Medical Society any such matter may be negotiated and adjusted to the mutual satisfaction of all concerned.

(e) Conduct at least one open meeting each year to which the members of the County Medical Society are specially invited.

The following suggestions were made to the County Medical Societies:

tories of cardiac patients. Ordinarily the rule is the other way, exercise makes the edema come. There are some patients—and I have not been able to distinguish of what type they are—who walk off edema instead of walking it on. That seems to be the case here. Ordinarily when the patient gets up in the morning the edema comes and when he goes to bed it goes off. But sometimes a patient can get rid of edema by using his muscles.

2 "Pain in his shins and calves." I suppose that is from the same cause that makes edematous parts so tender. When you are feeling along the shins you will find that every now and then the patient winces. There is tenderness there more than elsewhere. I suppose it is due to some physical or chemical change in the nerve endings from the presence of the fluid.

3 As the mother's heart disease and rheumatism occurred in the last twelve years of her life we probably can infer that it was not the rheumatism that produces heart disease but the stiffness and soreness about the joints which old people have and which have no connection with heart disease.

#### NOTES ON THE PHYSICAL EXAMINATION

1 The right and left blood pressures were identical. Those differences are less than any we can measure with any blood pressure machine that I know. I suppose that they were thinking of the possibility of aneurysm. That is the only condition in which we get big differences of blood pressure on the two sides.

2 The red area over the tip of the sacrum is a danger signal for a bedsore. If that is not very carefully taken care of, shielded by "doughnuts" and things of that kind, you do not escape the bedsore. Where else should we look for red areas?

STUDENTS: On the ankles—heels—scapulae—great trochanter of the femur.

3 DR. CABOT: There was an opening into which they could put a probe but into which they could not get far. I should say it was not a fistulous opening but a pilonidal sinus.

4 What do you infer from the fundi?

A STUDENT: Arteriosclerotic changes.

DR. CABOT: With or without hypertension?

5 The laboratory findings are all negative.

6 If we were certain that he had a third sound and not a murmur we could infer nothing. It is one of the most difficult things in auscultation to tell a third heart sound from a mid-diastolic murmur. Very few practicing physicians that I know can do it. It is quite a possible thing to teach, but it did not come up as a thing necessary to teach in our medical schools until recently. We have no positive evidence here either at the apex or anywhere else of a diastolic murmur.

7 If the man could not stand the journey home he could not stand amputation. It was considered and refused.

8 That death again is one of those incidents that you would much rather have happen in an institution than outside. If it happened outside it would certainly be said that the nurse murdered him.

#### DIFFERENTIAL DIAGNOSIS

From a purely medical point of view I do not think the case offers much difficulty. We have been given the facts on the heart and we have to say there is hypertrophy and dilatation. We know that hypertensive heart disease at his age is overwhelmingly more common than any other type of heart disease. Hypertensive heart disease with cardiac hypertrophy and dilatation are the fundamental things. Failure of the heart in that condition is what gives the dyspnea and the tender condition and edema of the legs. We have to account for that arterial embolism which I have no doubt he had in the right leg. We have got to suppose the possibility of an intracardiac thrombus in the left ventricle. Experience shows that these arterial thrombi usually extend farther up than we expect. We have evidence only below the knee. Unless I am mistaken I think we shall find that his goes away up into the pelvis.

What can we say about the kidneys? I think they will be found to be arteriosclerotic. There is no good evidence of nephritis. There is good gravity of urine, a negative sediment, a fairly low non-protein nitrogen. I should say the kidneys ought to show general arteriosclerosis but not nephritis.

A STUDENT: Was the sugar test done?

MISS PAINTER: The urine showed no sugar.

DR. CABOT: As to his brain we will not argue, as Dr. Mallory did not get permission to examine the head.

The lungs should show general passive congestion and hydrothorax, although we have no evidence of the latter.

The liver of course will show passive congestion. Presumably there will be some fluid in the peritoneum.

A STUDENT: Do you have to suppose an arterial embolus in that leg?

DR. CABOT: No, you do not. You can have peripheral arterial thrombi with no source found. You always wonder if you have not missed something. I am right in that, am I not, Dr. Mallory?

DR. TRACY B. MALLORY: Yes, sir.

A STUDENT: Is a concentrated urine red, as it says here?

DR. CABOT: Yes, reddish.

A STUDENT: What was the leading cause of death?

DR. CABOT: Exertion in a patient with a heart having very little marginal reserve.

A STUDENT: Do you think that it is necessary to assume cerebral thrombosis or meningitis or anything of that sort?

DR. CABOT: I do not care to spend time on

## Case Records of the Massachusetts General Hospital

ANTE MORTEM AND POST-MORTEM RECORDS AS USED IN  
WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY R C CABOT, M D  
F M PAINTER, A.B., ASSISTANT EDITOR

CASE 14181

EDEMA OF THE FEET

MEDICAL DEPARTMENT

An Irish-American farmer sixty-eight years old entered March 9 complaining of swelling of the ankles of four months' duration

Eight years before admission the patient had an illness similar to the present one, with dyspnea and edema of the legs, lasting for a few weeks

For a year or two he had urinated three or four times at night and had had a little difficulty in starting the stream. For a year he had not been quite so "spry" in his work as usual. He had, however, continued to do a great deal of work every day until four months before admission. Then he began to have dyspnea on exertion, orthopnea, swelling of the ankles and high colored, often reddish urine. He continued to do some work until three weeks before admission. He thought that exercise as well as a night's rest caused the edema to go down. When it was marked he had pain in his shins and calves, severe at times, especially at night. He had grown more and more dyspneic and in the past month had begun to have attacks of nocturnal dyspnea waking him from a sound sleep, lasting about an hour and forcing him to sit up to breathe. For six weeks he had had cough, chiefly at night, with a quarter of a glassful of whitish sputum daily. For four weeks he had been taking digitalis. Two weeks ago he had nausea and vomiting for two days, due his doctor said to overdosage of digitalis.

His mother had heart disease and rheumatism for the last twelve years of her life. She died of pneumonia.

Clinical examination showed a man sitting up in bed with slightly rapid but not labored breathing. Skin loose, apparent loss of weight. Small deep bilateral supraclavicular glands. Bean sized inguinal glands. Barrel chest. Moist râles at both bases. Heart fibrillating at a slow rate. Forceful apex impulse seen and felt in the sixth space. Left border of dullness 15 centimeters to the left of midsternum, 4.5 centimeters outside the midclavicular line, right border 3.5 centimeters, supracardiac dullness 8 centimeters. Sounds of good quality. A soft systolic murmur all over the precordium, best heard

over the tricuspid area. Blood pressure right 142 to 128/72, left 145 to 125/75. Pulses normal. Artery walls palpable and tortuous. Lower dullness from the fifth rib to 4.5 centimeters below the costal margin, edge palpable. Resistance to palpation, probably liver, 6 centimeters below the costal margin, slightly tender. Marked pitting edema of the legs from the thighs down. Skin over the right instep and lower leg red, wrinkled and in places broken. Slight edema of the prepuce. A red area over the tip of the sacrum—non-patent fistula. Prostate large, firm, symmetrical, not tender. Pupils normal. Fundi right disc margin indistinct, left showed a white lateral crescent, vessels tortuous. Reflexes normal.

Amount of urine not recorded, specific gravity 1.022, cloudy at both of two examinations, a large trace of albumin at both, sediment negative. Blood normal. Wassermann not recorded. Non-protein nitrogen 43 milligrams. Icteric index 5.

Temperature 97.1° to 101.9°, rectal. Pulse 61 to 102. Respirations 25 to 14.

March 12 the blood pressure was 190/105. The following day the heart rate was about 85. At the apex was a fairly loud short systolic murmur, transmitted toward the axilla. The first sound here was of fair quality, the second sound normal. In diastole here there was a middiastolic third sound. There was no systolic at the base and no diastolic there or along the left border of the sternum. On March 13 there were small shallow ulcerated areas on the third and fourth right toes, painful and tender, partly covered with white dead skin. The entire right foot and lower leg were dusky red and slightly colder than the left. The dorsalis pedis pulsation was felt in the left but not in the right foot. On the left a vessel could be felt to pulsate anterior to the external malleolus. A surgical consultant advised no further treatment.

The patient was so noisy that he had to be transferred to a private room. Plans were made for his care at home, though it was questioned whether he was able to stand the journey. It was thought that possibly digitalis might be responsible for his dementia. He became more and more unmanageable. He made response to morphia, but only limited use of the drug was possible because of his respirations. In spite of it he overpowered his attendants several times and got out of bed. March 18 in such an excursion he became hyperactive and fell suddenly to the floor, cyanotic and breathing rapidly. Soon after being put back to bed he died.

### DISCUSSION

BY RICHARD C CABOT, M D

#### NOTES ON THE HISTORY

1 "Exercise as well as a night's rest caused the edema to go down." That is a thing that we are struck with sometimes in taking his-

noticed that his urine was bloody and sometimes contained clots. He had dysuria, worst at the end of urination. This had gradually increased in severity. After three months of treatment in his home town he was sent to the nearest large city, where a cystoscopy was done and three treatments given, the last one three months before admission. The first of these treatments stopped the bleeding for about three months. The other two had little effect. He had had intermittent dull suprapubic pain for the past three months, usually more intense just before urination. For ten years he had urinated once or twice at night. He now urinated ten to twenty times at night and every half hour by day, passing sometimes only a spoonful. With the onset of the hematuria the nycturia suddenly increased. Since the onset of the present illness and especially during the past three months he had had frequency. For the past few months he had had dribbling.

Three sisters died in their early twenties, probably of tuberculosis.

He had had rheumatism in his back for the past ten years. He had dyspnea on moderate exertion. He had lost ten or twenty pounds in the past few months.

Clinical examination showed a fairly well nourished man. Lungs clear. Apex impulse of the heart not seen or felt. No enlargement to percussion. Sounds of good quality. An occasional extrasystole. A loud systolic murmur over the apex. Artery walls palpable. Blood pressure 170/100. Liver could not be mapped out, probably because of gas in the colon, possible atrophy. Abdomen otherwise negative. Prostate seemed diffusely enlarged and somewhat firmer than usual. Marked tenderness. No adherence to the rectum. Pupils normal. Early cataracts. Reflexes normal.

Before operation urine normal in amount, specific gravity not recorded, a slight trace to a very slight trace of albumin, sediment grossly bloody at both of two examinations, with many leukocytes. January 15 residual 20 cubic centimeters of bloody urine with bits of whitish tissue. Renal function 60 per cent. Blood not recorded. Wassermann negative. Non-protein nitrogen 33 to 43 milligrams.

Before operation temperature 97° to 99°, pulse 68 to 100, respirations not remarkable.

X-ray showed marked hypertrophic changes about the margins of the lumbar spine. There was calcification of the arteries of the pelvis. The left kidney outline did not appear abnormal. There were no visible stones. A film of the chest showed no abnormalities.

January 13 cystoscopy was done. The patient suffered a good deal. January 19 operation was done. After it the patient suffered much more. The indwelling catheter became blocked, adding to his discomfort. He was heavily morphinized. January 23 the pain became much less severe. The drainage was from

around the tube rather than through it. Beginning January 29 he had alternate diarrhea and constipation with pain in the rectum. February 3 he was irrational at times and the following day quite dull. The bowel condition improved, but the general condition became much worse. On and after February 7 the temperature was 96.9° to 100.1°, the pulse 79 to 120. He became irrational or stuporous most of the time. February 12 the urine showed a trace of albumin and was loaded with pus and debris. Morphine was used liberally. February 28 he died.

## DISCUSSION

BY HARVARD H. CRABTREE, M.D.

I am acquainted with the history and operative findings in this case but not with the necropsy findings. The discussion is along the line of reasoning employed during his study and treatment.

This is a man of sixty-seven with a urinary history going back two years. Of course the first thought is of a possible prostatic situation. The story however is more of bloody urine and pain associated with it than of straining or retention or anything suggesting difficulty in passing urine. The absence of obstructive symptoms is against a prostatic enlargement. He might have bloody urine from enlarged prostate, particularly an ulcerated middle lobe. On the other hand if hematuria which began two years before had been due to ulceration from enlargement there would probably have been retention or threatened retention some time during those two years.

There was important time—three months—lost between the appearance of his symptoms and the date when diagnosis was seriously attempted. Then he was cystoscoped and three treatments were given, but the last was only three months before his admission to this hospital. If he had a neoplasm of his bladder the original cystoscopy certainly should have shown it and active treatment should have been instituted.

He had urinated once at night for ten years suggesting an enlarged prostate, possibly. The frequency was increased to ten to twenty times at night and every half-hour by day just previous to admission. That of course might go with a bladder which was gradually filling up with residual, and the mention of dribbling would be consistent with that.

The rheumatism in his back is not surprising at his age, neither is dyspnea on moderate exertion.

The loss of ten to twenty pounds in a few months he might have had with chronic retention from prostate, or he might have had it from malignancy.

"Prostate diffusely enlarged and somewhat firmer than usual, marked tenderness." It is



that If the head had been examined it would have been worth while to go into it I do not believe he had meningitis I doubt if he had anything more than the arteriosclerotic process, that could account for all the mental symptoms Patients have to be put into insane asylums for pure cerebral arteriosclerosis

A STUDENT How far may renal arteriosclerosis go without being called nephritis?

DR CABOT As far as the pathologist allows That is up to the individual expert I am predicting what Dr Mallory will say You have to know your pathologist, however

#### CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Arteriosclerosis, general and cerebral  
Congestive failure

#### DR RICHARD C. CABOT'S DIAGNOSIS

Hypertensive heart disease  
Hypertrophy and dilatation of the heart  
Embolism of the right leg

#### ANATOMIC DIAGNOSES

##### 1 Primary disease

Cardiac infarction

##### 2 Secondary or terminal lesions

Bronchopneumonia  
Arteriosclerosis generalized (including pulmonary)  
Passive congestion, general

DR MALLORY The most important finding in the case was an immense heart weighing 840 grams. Both cavities took part in the hypertrophy, the left however considerably more than the right The entire apex of the ventricle was destroyed by a large infarct nearly 5 centimeters in diameter Over this a thrombus was adherent on the endocardial surface There was no change in the epicardial surface A portion of this thrombus had broken loose and produced the embolus in his leg It is also quite possible, although we have no evidence, that an embolus in the cerebrum may have been the immediate terminal cause of death

The descending branch of the left coronary artery showed very marked sclerosis, with at one point a small calcified mass which almost completely—not quite—occluded the lumen of the vessel There is always the possibility in these cases, of course, that a thrombus has occurred at some previous time and has become recanalized, so that in many of these cases of long-standing infarct of the heart we do not find completely occluded coronaries The infarct here was of long standing, since marked fibrosis had occurred The heart muscle had been for the most part absorbed, thinning the wall of the ventricle at the apex down to less than two millimeters At this point it bulged out in the form

of a small but quite definite aneurysm of the heart itself

The lungs showed a slight degree of emphysema, and microscopically a few areas of bronchopneumonia were found, but not enough to have been of much significance in the clinical picture

The rest of the organs showed a marked chronic passive congestion

The kidneys showed only a moderate degree of arteriosclerosis, many changes in the larger and medium sized vessels, very few in the glomeruli themselves

I think in answer to what Dr Cabot was saying as to when we can call vascular changes in the kidney nephritis, there is no hard and fast rule Every pathologist does have his own criteria Possibly the chief point is whether there is a more or less generalized process in the glomeruli With arteriosclerosis of the large vessels only, clusters of glomeruli supplied by the single vessels, which have become thrombosed and occluded, undergo a slow type of infarction, and we get fibrous scars In general that type of fibrous kidney seems to produce no clinical symptoms other than possibly hypertension When, however, one has a diffuse process affecting to a slight degree only perhaps, all the glomeruli, we have signs of renal insufficiency at one stage or another In this kidney there was practically no change in the minute arteries, the afferent arteries of the glomeruli, and very few changes in the glomerular capillaries It is a case in which I should feel quite confident in saving from the histologic section only that he would not have shown any true renal symptoms other than hypertension

DR CABOT How far did the embolism extend in the artery?

DR MALLORY It was down below the thigh

DR CABOT This man had a cardiac infarct What is the ordinary symptom of cardiac infarct?

A STUDENT Pain.

DR CABOT Yes, and he did not have that It is not extremely rare to have a case of cardiac infarct without the only symptom by which we can distinguish it If there is no pain we cannot make the diagnosis The very large majority of cases that I have known have had pain If this man had it he did not tell anybody, or nobody told us Was this a matter of months?

DR MALLORY Yes, it was two months at the very least

#### CASE 14182

#### NEGLECTED HEMATURIA WITH FATAL RESULT

#### UROLOGICAL DEPARTMENT

An Irish-American laborer sixty seven years old came to the Emergency Ward January 10 complaining of hematuria

A little over two years before admission he

ently lay more to the right than to the left. The prostatic ring, at least anteriorly, looked normal.

#### CYSTOGRAM

The shadow of the injected bladder was not definitely abnormal in size but was abnormal in general outline. Occupying the greater part of the right half of the bladder and extending beyond the median line there was an area in which there was absence of the opaque solution. The area showed considerable variation in density and its margins were somewhat irregular. It might have been produced by a large irregular growth in the bladder.

#### FURTHER DISCUSSION

DR HOLMES: The dark area on the plate of course represents the fact that Dr. Crabtree has just described. This represents the opaque mixture in the bladder. The bladder outline is often very irregular in normal people, and the rugae and spasm pressure, etc., make interpretation of these plates difficult. I think the man who does the cystoscopic examination is often in a better position to interpret these plates than we are. He knows what he is looking for and whether these appearances agree with what he sees. Such plates are however of use in determining the size of the bladder tumor even after cystoscopic examination has been done.

DR CRABTREE: Would you have been willing to make a diagnosis of neoplasm of the bladder from X-ray alone?

DR HOLMES: No. I should have said it showed a filling defect. Anything inside the bladder would produce such an effect. Occasionally we get mottling, finger-like markings around the tumor, which is quite suggestive of tumor.

DR CABOT: Cancer was your diagnosis before operation?

DR CRABTREE: Yes. The question might arise, after seeing such an extensive growth in the bladder and considering the X-ray and cystoscopic evidence, whether operation was justifiable. We undertook it with the idea that it was not going to be curative. The only thing, I think, which would justify it in this case would be the hope of relief of his pain by giving him permanent suprapubic drainage and stopping his bleeding. We did not expect that it would be found possible to remove a growth of this apparent size. The most that we hoped to do was to cauterize it or treat it with radium or perhaps do both, and drain his bladder.

#### PRE-OPERATIVE DIAGNOSIS JANUARY 19

Carcinoma of the bladder

#### OPERATION

Gas oxygen and anesthetic. An extensive tumor involving the entire right side of the bladder was coagulated with a low diathermy cur-

rent. Radium seeds were implanted in the tumor and around its edge and a suprapubic drain inserted.

#### PATHOLOGICAL REPORT

Two small fragments from the bladder showing on microscopic examination the structure of squamous cell carcinoma with considerable pearl formation. The histologic appearances suggest a growth of a relatively low grade of malignancy.

Squamous cell carcinoma

#### FURTHER DISCUSSION

No attempt was made to remove it. He did fairly well for a while.

The mention of diarrhea and constipation and of pain in the rectum is interesting. I suppose a possible explanation of that would be the diathermy and possibly the radium. This tumor is in the right side, which would be a little away from the sigmoid. On the other hand it was so extensive and so low that it might have been directly over or beside the rectum, and the treatment have been the cause of the rectal symptoms which followed.

There is no mention of the relation of the ureter to this mass. It seemed to us at the time that it must necessarily have been involved, either going directly through the mass or so close to it that pressure on or actual invasion of the ureter might be expected to have some back pressure effect on the right kidney. His blood nitrogen and phthalein indicated a good total kidney function. On the other hand this mention of stupor, dullness, and irrational condition suggests that the man was getting uremic, his temperature of course was from sepsis and absorption. The X-ray does not show or state the size of the right kidney. Sometimes if the ureter is blocked the kidney seems to be increased in size. We have no evidence of that here. We quite expected, however, to find that that ureter was involved, that the right kidney was somewhat impaired and the man had been living more on his left one.

We thought that he died uremic and septic. A certain amount of sepsis would come from the slough and he would absorb, of course, a good deal from that and even if his kidneys were not already infected, he might easily get a secondary infection in one or both from that source. We thought this growth probably extended through the bladder wall and very likely was adherent to outside structures.

#### CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Carcinoma of the bladder

#### DR HARVARD H. CRABTREE'S DIAGNOSIS

Carcinoma of the bladder extending through the bladder wall and adherent to outside structures.

difficult to say from this whether it was thought there was enough enlargement to cause retention or not. The tenderness is somewhat against an ordinary adenomatous prostate. There might well be tenderness with a malignant prostate or bladder base. If this prostate had been malignant I think it would have been described as hard or nodular,—at least not as "somewhat firmer than usual."

The urine, except for gross blood, does not help out in the diagnosis. A residual of only twenty cubic centimeters however is important evidence. Adenomatous enlargement of the prostate we can accept as pretty well ruled out. That is only one observation on the residual, and there is a possibility of error there. I mean that on one occasion he might empty his bladder better than on others, but I should not expect him to have as little as twenty cubic centimeters at any time if he had an obstructing prostate.

A renal function of sixty per cent is very good. Again, a man with an obstruction going back two years would probably have a depressed function, a good deal below this.

The normal nitrogen is also against chronic obstruction with resulting kidney damage.

DR GEORGE W HOLMES These spur like projections on the margins of the spine we speak of as "hypertrophic spurs." They are about as common as arteriosclerosis. Whether they represent a true arthritis or not I do not know.

The arteries that we see usually are the ones rather deep in the pelvis, the internal iliacs. It would be impossible to demonstrate them in this light.

DR CRABTREE The X-ray evidence would lead us to expect that a neoplasm would be found rather than any particular enlargement of the prostate, and that the condition is not a neoplasm of the prostate but a neoplasm of the bladder.

#### PRELIMINARY DIAGNOSIS JANUARY 13

Carcinoma of the bladder

#### CYSTOSCOPY

The cystoscope passed easily. A great deal of slough, mucus and pus was washed out of the bladder, but the median could not be got clear and the view obtained was imperfect for this reason and because of free oozing of blood. A mass of sloughing tissue was seen which appar



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#### CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Carcinoma of the bladder

#### DR HARVARD H. CRABTREE'S DIAGNOSIS

Carcinoma of the bladder extending through the bladder wall and adherent to outside structures.

Probability of right ureteral obstruction  
Uremia  
Sepsis

## ANATOMIC DIAGNOSES

1 *Primary disease*

Epidermoid carcinoma of the bladder

2 *Secondary or terminal lesions*

Chronic cystitis  
Chronic pyelonephritis  
Occlusion of right ureter  
Atrophy of right kidney  
Fibrous myocarditis  
Arteriosclerosis  
Lobar pneumonia

DR TRACY B MALLORY A large papilloma-  
tous cancer of the bladder was found occupying  
the right lateral, most of the anterior, and most  
of the posterior walls. Anteriorly it passed  
through the bladder wall and was already in-  
vading the periosteum of the posterior surface of  
the pubes. Posteriorly it had gone through the  
muscular wall of the bladder but had not as

yet invaded the rectum. The right ureter was  
completely occluded by a tumor mass, and the  
right kidney, as one would expect, was atrophic,  
the right ureter dilated, and also the pelvis of  
the right kidney. There was practically no  
renal parenchyma on that side. The left kidney  
was markedly hypertrophied, suggesting that  
the closure of the ureter on the right side must  
have occurred a considerable time before to per-  
mit of compensatory hyperplasia on the opposite  
side. Many scars and minute purulent abscesses  
were found in the cortex of this last and rela-  
tively better kidney.

The immediate cause of death was a lobar  
pneumonia in his left lower lobe. There was a  
moderate degree of arteriosclerosis. The heart  
was negative, the other organs essentially nega-  
tive.

DR CRABTREE Here was a man of cancer  
age, with progressing hematuria and bladder  
pain, allowed to bleed three months before he  
was cystoscoped and to waste twenty one months  
more in half-hearted treatment. If hematuria  
were invariably regarded with the same serious-  
ness as hemoptysis—and it obviously ought to  
be—then possibly his life, like many others  
might have been saved.

# The New England Journal of Medicine

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## CO-OPERATION

THERE has been so much disagreement, so much quibbling and so much petty jealousy between doctor and health agency that it is refreshing and inspiring to find that New York State is in a fair way to find the solution which spells the arrival of the millennium when lion and lamb will lie down together. Which is the lion and which the lamb we will not dare to state, we humbly ask that a mere figure of speech will not be taken too literally. As in so many of the affairs of human life, friction in this case is caused, not by too close contact but by too wide separation increasing the shock of occasional and unforeseen contact. Gears which mesh perfectly and are well lubricated mesh quietly and perform good service together, unadjusted gears clash noisily and serve only to injure each other.

Recognizing that coöperation and mutual understanding would do much to further the interests of all parties, leading members of the New York Medical Society, the State Charities

Aid Association, Committee on Tuberculosis and Public Health, and the State Health Department met in November, 1925 in an informal conference to begin a discussion which might bring to light underlying conflicts. All phases of public health were discussed in detail and after their intricacies were thoroughly threshed out it developed that there was little, if any, real difference of opinion.

Two other similar meetings followed, and in the following November the State Committee on Tuberculosis and Public Health of the State Charities Aid Association adopted a resolution suggesting to the president of the State Medical Society the creation of a joint committee to carry on officially the work of cooperation that had been begun informally the preceding year. The preliminaries to the appointment of this committee and its final report were published in July 1927 by the State Charities Aid Association.

The report of this committee which dealt with general considerations as to relation between medical organizations and voluntary health agencies was submitted to the House of Delegates of the State Society at its meeting in May, 1927, and was unanimously adopted. The Board of Managers of the State Charities Aid Association approved it later in the same month, and in the following month the State and Local Committees on Tuberculosis and Public Health of the S. C. A. A. unanimously approved it.

This report recognized that most of the basic principles on which public health methods are carried on were established by the wish of physicians, that the success of public health endeavors is directly proportionate to the interest taken in them by the medical profession, that the physician's activity in public health work should be encouraged and his coöperation solicited, and that the intimate relationship between physician and patient should be encouraged rather than disturbed.

Two sets of rules—of golden rules—were formulated by the Committee: one for the voluntary agencies, the other for the medical societies, and in these lies the kernel of the whole report, they are the hinges on which the door of mutual understanding swings.

## SUGGESTIONS FOR VOLUNTARY AGENCIES

(a) Invite the County Medical Society to designate a certain number of its members, say two, to become members ex-officio of its board of directors or executive committee, if there be one.

(b) Lay its annual program of activities before the County Medical Society for information and suggestions.

(c) Appoint a special committee to confer with a similar special committee appointed by the County Medical Society about matters that

come up from time to time in which both groups are mutually interested

(d) Report to the parent body of the voluntary health agency any matter as to which an accord has not been reached with the County Medical Society, in the hope that through conference between the parent body of the voluntary health agency and the State Medical Society any such matter may be negotiated and adjusted to the mutual satisfaction of all concerned

(e) Conduct at least one open meeting each year to which the members of the County Medical Society are specially invited

#### SUGGESTIONS FOR MEDICAL SOCIETIES

It is believed that these desirable results will also be furthered if the County Medical Society will include the following in its program

(a) Accept the invitation from the voluntary health agency to designate certain of its members to serve as members ex-officio on the board of directors or executive committee of the voluntary health agency

(b) Study and consider any program of activities that may be referred to it by the voluntary health agency for information and suggestions, and, if such program is approved, make a public statement to that effect, and otherwise support the program so approved

(c) Appoint a special committee on public relations to confer from time to time with similar committees appointed by the voluntary health agency on matters of mutual interest to both agencies

(d) Report to the State Medical Society any matter as to which an accord has not been reached with the voluntary health agency, in the hope that through conference between the State Medical Society and the parent body of the voluntary health agency any such matter may be negotiated and adjusted to the mutual satisfaction of all concerned

We in Massachusetts hear a good deal of the type of back-biting and scandal-mongering that results from and begets mutual misunderstanding and dissatisfaction. The hospital interne cavils at the Social Service Department which is his best friend in helping him care for his patients, the officious social worker makes diagnoses and acts accordingly, the practitioner criticizes the hospital and the clinic for stealing his patients, and the Health Department for interfering with his practice

A little understanding, a little cooperation, a little mutual consideration, and above all a little free discussion of the problem involved is all that is necessary to bring about a cordial relationship. Cannot we, also, organize in the larger sense for the benefit of humanity?

## THE FILTERABLE VIRUSES

THERE are few more fascinating fields in medicine today than the study of that wide group of diseases caused by the so-called "filterable viruses", substances whose nature is in dispute, and a number of which apparently come from the unknown and depart into the unknown, leaving only disease or death as token of their passage. There is no doubt but that included in this group of diseases due to the filterable viruses are a number of diverse conditions. Inasmuch as an arbitrary unit of size is the only standard for the admission of disease producing agents into this group, we know certain of them to be minute bacteria, others we know to be living substances, and still others are as yet in question as to whether they are animate or inanimate. Any number of lesions are traced to agents apparently belonging in this group, ranging from infectious chloroses of plants, jaundice of silk worms, hog cholera, lymphocytic disease of fish, to such every day diseases as warts, measles, and vaccinia.

The importance of some of these diseases, such as encephalitis and poliomyelitis, has only been recognized in recent years. As is pointed out by Rivers<sup>1</sup>, the group is no more homogeneous in regard to its epidemiology than in any other aspect, ranging from the extremely contagious diseases such as smallpox, to the Rous sarcoma of chickens, transmitted only by inoculation.

Certain of the viruses, in addition to the specific character of the disease which they produce, cause definite intracellular changes, some of which have long been familiar, such as the Negri bodies in rabies. It is to be hoped that through the study of these viruses in their hosts or in cultures of tissues from hosts that it will be possible to throw new light on the problems that confront us in their control. The fine example that Pasteur has given us of the ability to master one of the most important of the diseases due to filterable viruses even though ignorant of its exact nature, through his discovery of the mode of transmission and the prophylactic inoculation against rabies, should lead to conquests of other of these little understood diseases, perhaps even without waiting for the essential but slow and blind groping toward complete understanding of them.

#### REFERENCE

- 1 Rivers, Thomas M. *Filterable Viruses*. Williams & Wilkins Co. 1928

## SOME DEFICIENCIES IN DEALING WITH TUBERCULOSIS

For more than a generation Massachusetts has given concentrated attention to the problem of tuberculosis. This state has been in the front line of attack on this disease. It has built and caused to be built sanatoria for the reception of tuberculosis patients. Its Department of Public

Health has done excellent work through State institutions and campaigns of education. Voluntary local and state organizations have cooperated with official health bodies.

The Massachusetts Medical Society has a section devoted to tuberculosis which places before the profession during the Annual Meetings the most important features incident to dealing with this disease.

The main purposes of the combined efforts of public and voluntary tuberculosis organizations are first prevention through the promotion of better health, second early diagnosis of the disease and third treatment.

The field of prevention has been well cultivated and reasonable efficiency seems to have been established. Unfortunately early diagnosis of the disease is not as general as it should be.

This defect in the attack on the disease can be laid to the practitioner in too many cases although the indifference of the patient is a contributing factor. It may be too much to expect that there will be general recognition of the pre-tuberculosis conditions where there may be so slight evidences of latent infection that only the expert can be sure of the diagnosis, but it is fair to demand of the practitioner that all cases of lowered vitality which are not due to some obvious cause should be studied to establish or rule out the diagnosis of tuberculosis. If the easily demonstrable lesions in the lungs, however, are not detected by the family physician the question may be raised with respect to the competency of such doctors. It may not be a stretch of the imagination to conceive of official action when such lapses are found to have existed.

The recent report of a case to the Commissioner of Public Health of Massachusetts is pertinent and reads as follows:

I visited Mary D. at 10 A. M. Wednesday, April 11th. This is the story. In June 1927 this girl first felt ill and sought the advice of her family physician who gave her a tonic, said nothing about discontinuing her work. She continued to work for about six weeks, growing steadily worse and believing that the "tonic" which the doctor gave her made her worse instead of better. One day she fainted, returned to her doctor and asked him if he thought there was something wrong with her lungs as she had developed a cough which was dry and persistent. After examining her he said "No there is nothing wrong with your lungs and don't let anyone tell you that there is." Gradually feeling worse she stopped work herself and thought that going to the country would help her. She went in July to New Hampshire and there met a nurse who advised her to go and see an expert.

This she did in October and he, after examining her said she was a proper candidate for Rutland.

This illustrates a defect in medical practice

the record of which is in the possession of the State Department of Public Health.

The examining physician recommended this patient for admission to the Rutland Sanatorium but the waiting list then on file prevented her entrance.

It is true that a bed was available at Mattapan but the patient and her friends preferred to wait for an opening at Rutland.

This opens the question long a source of worry to our health authorities with respect to the responsibilities of the State.

If doctors recommend patients to certain sanatoria the patient may not be willing to accept a substitute.

With the recognized advantage of sanatorium care this case (which is not unique) raises the question as to the responsibilities of Health Authorities. The addition to the number of sanatoria as required by the passage of a bill by the Legislature recently, requiring two country institutions to be built may help the situation as it applies to sanatoria.

Further attention to early diagnosis is apparently a very important field for concentrated propaganda.

### THIS WEEK'S ISSUE

CONTAINS articles by the following named authors

MILLER, RICHARD H. A.B., M.D. Harvard, 1910. F.A.C.S. Assistant Visiting Surgeon, Massachusetts General Hospital, Assistant Professor of Surgery, Harvard Medical School. Address 270 Commonwealth Avenue, Boston. Associated with him is

ROGERS HORATIO A.B., M.D. Harvard, 1923. Assistant in Surgery, Massachusetts General Hospital. Address 270 Commonwealth Avenue, Boston. Their subject is "Sarcoma of the Uterus." Page 927.

FINE JACOB A.B. M.D. Harvard, 1924. Formerly Assistant Resident in Surgery, Massachusetts General Hospital. Interne at Lakeside Hospital in Cleveland, Graduate Assistant at Massachusetts General Hospital. Address Nantucket Mass. Associated with him is

BROWN, SAMUEL S.B., M.D. Harvard, 1927. Formerly Assistant Resident Medical Officer at Boston Sanatorium. Address 672 Second Street, Fall River, Mass. Their subject is "The Influence of Parathormone on Bone Regeneration." Page 932.

TERHUNE WILLIAM B. M.D. Tulane School of Medicine 1915. Austen Riggs Foundation. His subject is "Psychopathology and Treatment of the Psychoneuroses." Page 937. Address Stockbridge Mass.

EINHORN MOSES. Herzlia College, Tell Aviv Palestine, M.D., University Bellevue Medical College, 1922. For 4 years on the Gastro Enter-



ological Staff of the Outpatient Department of Mount Sinai Hospital, Gastro Enterology, Beth Israel Hospital Inventor of several gastroenterological instruments His subject is "Minim Method for Analysis of Gastric Content" Page 941 Address 983 Park Avenue, New York City

JOESS, MARK H MD Tufts, 1920 Resident Physician, Rutland State Sanatorium, 1922-1927, Examining Physician, Boston Health Department, Division of Tuberculosis, 1927-1928, Teaching Assistant, Department Pulmonary Diseases and Climatology, Tufts Medical School, 1927-1928 His subject is "Differential Diagnosis in Pulmonary Diseases" Page 943 Address 483 Beacon Street, Boston

CLIFFORD, RANDALL AB, MD Harvard, 1917 Assistant in Medicine, Harvard Medical School, Physician in Charge of Pulmonary Clinic, Massachusetts General Hospital, Consulting Physician, Massachusetts Eye & Ear Infirmary, Visiting Physician, Channing Home, Secretary of Trudeau Society of Boston His subject is "The Interpretation of Apical Râles In Pulmonary Tuberculosis" Page 948 Address 475 Commonwealth Avenue, Boston

NELBACH, GEORGE J BA, BL Cornell, 1907 Executive Secretary, State Committee on Tuberculosis and Public Health, New York State Charities Aid Association, from 1911 to date, Member, Board of Directors, National Tuberculosis Association, May 1927-May 1929, President, National Conference of Tuberculosis Secretaries, 1915 His subject is "Fundamentals in Tuberculosis Work with Respect to Voluntary Unofficial Association" Page 952 Address 105 E 22nd Street, New York City

### THE ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION

THE American Medical Association was the guest of Minneapolis, June 11 to 15, 1928, for its annual convocation

This city is one of the more progressive municipalities of the middle west and played the part of host to the largest medical society of the world most acceptably

Banners, flags and placards of welcome were in general evidence

The accommodations in the auditorium for the exhibits and the Annual Meeting were ample

The commercial exhibits numbering about one hundred and seventy were well displayed and covered the range of useful and necessary adjuncts to medical art A visitor might be led to wonder whether humanity need ever be ill with all the foods and medicines displayed and recommended to meet all of the deficiencies of nutrition and the inroads of disease Even our over-enthusiastic California Fruit Growers Association was on hand to cure the eighty or more million of the people of this country of the

claimed well-nigh universal acidosis which in the economic workings of nature may have been imposed on the race in order to promote the prosperity of that altruistic organization.

The multitude of surgical instruments and appliances is convincing evidence of the ingenuity of the inventive mind and together with the various electrical and light giving mechanisms suggests that if one could equip a sufficiently extensive suite of rooms with the instruments which the vendors would impose on the doctor the practice of medicine would be an exact science provided one had the capacity to understand and apply all of the devices recommended, and absorb all of the available literature

The scientific and educational features of the exhibits were of commanding interest Almost all departments of pathology were well represented and compilations of statistical facts relating to medical education, the distribution of physicians and the work of examining boards were well displayed, making an excellent post graduate course

The sections were well attended and the papers and discussions were especially interesting

A great deal of interest was shown in the work done in Boston, especially that of Minot and Murphy

Massachusetts men were much in evidence in the programs and audiences

The Annual Meeting Tuesday night was attended by more than two thousand Fellows and guests of the Association, and the auditoriums provided ample accommodations for the large audience

Dr William S Thayer's Presidential address was a carefully prepared resumé of the problems of especial interest to the profession with well chosen advice to maintain the best traditions of medicine and especially exert all possible influence in promoting public health or organizations and measures

He felt that all proper influence should be exerted by the profession to bring about the selection of well qualified members of public health bodies

Governor Christianson welcomed the Association to the State in an address which showed that he is in cordial sympathy with the medical profession and pledged himself to give all possible support to all efforts designed to ameliorate suffering and prevent disease

Governor Christianson is an orator of high rank and his address was an especial feature of the occasion

As a convention city Minneapolis ranks high both because of ample accommodations and its spirit of hospitality

In the closing session of The House of Delegates, Dr M L Harris of Chicago was elected President Elect to take office one year hence, and Portland, Oregon, won the honor of the place for the 1929 meeting

Dr Fred B Lund continues as a member of the Committee on Medical Education Dr Charles E Mongan of Somerville continues as a member of the Committee on Reports of the Trustees to the House of Delegates Massachusetts is also honored by the appointment of Dr Reginald Fitz of Boston as a member of the Committee to take the place of Dr Bevan, who has held this position for many years

The *Bulletin* recorded members from the New England States as follows Maine 6, New Hampshire 7, Vermont 5, Rhode Island 5, Connecticut 15 and Massachusetts 67 The total registration reported on Friday, the last day, was 4802

### THE MEETING OF THE HARVARD MEDICAL SCHOOL ALUMNI IN MINNEAPOLIS

As a feature of the meetings of the American Medical Association many organizations and groups appreciate the opportunity to meet and renew acquaintances of former years and compare notes

One of the enjoyable occasions at this year's meeting was a dinner of the graduates of the Harvard Medical School who were attending the meetings of the A M A at the Woman's Club of Minneapolis on the evening of June 13 Dr P E Truesdale of Fall River, the President of the Alumni Association, presided and called upon many of the Alumni for after-dinner remarks He kept the sustained interest of the Alumni by apt illustrations and appropriate references to facts connected with the development of the School in recent years, between the speeches of those who responded to him

Dr Elliott P Joslin, the first speaker, conveyed to his audience his unbounded enthusiasm in all matters connected with the school He told of the response of the Alumni to the appeals for contributions to the building fund for the dormitory, explaining that the general response was one important factor in leading Mr Vanderbilt to make his generous donation without which the building would have had to be deferred for a long time

He related several delightful experiences in connection with his visit to Minneapolis in visiting former students of the Medical School, and referred especially to the diagnosis of diabetic coma in a child ill with mastoid disease by a graduate of the School Thus Dr Joslin felt was a tribute to the acumen of the doctor and a credit to the School In a delightfully cordial way he called upon many of the men who are successful in their various fields to stand as he introduced them as examples of the finished product of the School

He paid tribute to the scientific work in Minneapolis a notable example being shown by the record of fifteen autopsies in every one hundred deaths in this city

Dr Roger I Lee found in his association with Dr F C Shattuck the inspiration for his remarks and told story after story setting forth Dr Shattuck's influence as a teacher on the students, the brilliant and original manner of conveying his thoughts and his experiences with his associates in the everyday affairs of life

Dr Lee's remarks were especially enjoyed because of the great popularity of Dr Shattuck who was not only a successful teacher but one whose interest in the students was so keen that all came to regard him as a personal friend

Dr Frank H Lahey reported the experience of a visitor to the clinic of a popular surgeon when he heard the recital of a particular formula four questions and answers which the staff had to learn in order to have impressed upon their minds the good fortune enjoyed by those who were privileged to be in that service This surgeon, however is not a graduate of the Harvard School and the illustration may have been intended to show the differences in the advertising methods of some as compared with the modest conservatism of Harvard men Dr George H Bigelow responded to the suggestion that he is the leader in public health matters in Massachusetts and like a Gatling gun let loose a rapid fire monologue of pungent stories in his unapproachable style We venture to assert that, of all graduates his mental machinery is geared to the highest possible speed and that his illustrations are picturesque to a superlative degree He won hearty applause

A reference to the development of the NEW ENGLAND JOURNAL OF MEDICINE was made by Dr W P Bowers with the explanation that the JOURNAL has been kept alive by Harvard men in the past He also took the opportunity to pay tribute to Dr F C Shattuck who supported the JOURNAL liberally, and to his brother, Dr George B Shattuck, who served as its Editor for many years Dr William Robey expressed pleasure in meeting men who had been his students in the School and the Boston City Hospital and called to mind some of the salient characteristics of the staff of the institution which were evidently appreciated by many of those who had served as internes in the hospital Dr Fred H Albee of New York expressed his pleasure in having been led to choose Harvard rather than some other medical school and told of the engrossing requirements of his work as prosecutor in the school which had prevented his acceptance of the invitation to play football on the Harvard team Dr J S Stone was asked to speak on a new departure in the policies of the Massachusetts Medical Society but, since this departure applied to certain functions imposed on him he simply referred to the position of Executive Secretary as an experiment still in the trial stage He did, however, find in his association with some of the prominent surgeons connected with the school certain occurrences which furnished material for interesting recollections Dr Ed-

mond F Cody of New Bedford and Dr Roland Hammond of Providence, both members of the House of Delegates of the A M A, explained the functions of this body and testified to the importance of the work done in the House and referred to the great influence which is being exerted by the Association in the elimination of sub-standard medical schools and quackery Dr David Parker of Manchester, N H, brought the congratulations and good wishes of his state to Minnesota speaking of both states as having distinctive charms which make them attractive He expressed approval of reunions and his appreciation of the standing of the Harvard Medical School and pride in the achievements of its graduates

Dr Sidney Storrs Hall of Minneapolis was presented as the oldest representative present, having graduated in 1867 He compared the education of his day with that of the present and felt proud of the contributions to medicine by the Alumni All rose in recognition of the long service to humanity by this still young appearing veteran in medical ranks

The last speaker was Dr Archie H Beard of Minneapolis to whom belongs the credit of having arranged the details of the alumni gathering He gave an interesting recital of some of the details of his work and expressed his pleasure in the hearty response to the effort to bring the alumni together He was given hearty thanks for his success in the perfect details of the meeting

That the meeting was unusually successful was shown by the sustained interest up to midnight

The list of men who attended follows

W R Ohler 1914, Boston, Mass  
Nathaniel Allison 1901 Boston, Mass  
Fred H Albee, 1903 New York, N Y  
James S Stone 1894 Boston, Mass  
C Guy Lane, 1908, Boston, Mass  
Samuel Ayres, Jr 1919, Los Angeles Calif  
Charles L Martin, 1919 Dallas Texas  
Monroe A McIver, 1917 Boston, Mass  
Eric Stone 1918 Providence R I  
E K Steenburg 1918 Aurora Neb  
Theodore H Aschman, 1917 Kansas City, Mo  
Philip A. Kober, 1909, Evanston, Ill  
Lawrence W Smith 1920, Boston Mass  
George H Bigelow 1916, Boston Mass  
Frank Conger Smith, New York University Medical College 1894, Yankton S D  
E Stanley Abbot 1893 Boston Mass  
George H Thomas, 1895, Minneapolis Minn  
Frank R Ober Tufts College Medical School 1905  
Member of Harvard Medical School Faculty, Boston, Mass  
Arthur T Mann, 1896, Minneapolis Minn  
Achie H Beard 1914, Minneapolis Minn  
Norman P Johnson, 1923, Minneapolis, Minn  
Edward T Evans 1922 Minneapolis Minn  
John F Curtin 1915 Minneapolis Minn  
David W Parker, 1903 Manchester N H  
John H Morse, 1901, Minneapolis, Minn  
Edwin W Ryerson, 1897, Chicago, Ill  
F C Kidner 1904, Detroit, Mich  
Raymond J Reitzel, 1924, Galveston Texas  
Joseph P Evans 1929, La Crosse, Wis

Warner Ogden, 1920, St. Paul, Minn  
Harry Oerting, 1917, St Paul, Minn  
James A. Evans, 1920 La Crosse Wis  
Hilding Berglund, Medico-Chirurgical Institute, Stockholm, 1916, Minneapolis, Minn  
William H Robey, 1895, Boston, Mass  
E P Joslin, 1895, Boston, Mass  
Roger I Lee, 1905, Boston, Mass  
Roland Hammond, 1902, Providence R I  
Frank H Lahey, 1904, Boston Mass  
Edmond F Cody, 1893 New Bedford, Mass  
Sidney Storrs Hall, 1867, Minneapolis, Minn  
Arthur T Legg, 1900 Boston, Mass  
Paul Starr, Rush Medical College, 1922, Chicago  
Elmer H Heath 1923 Baltimore, Md  
Theodore K Selkirk, 1923, Cincinnati, O  
J Victor Greenebaum 1911 Cincinnati O  
Lewis M Hurxthal 1923, Boston, Mass  
Derrick T Vail Jr, 1923, Cincinnati, O  
Franc D Ingraham 1925, Boston, Mass  
Kenneth L Dole, 1915 Redlands, Cal  
O H Mueller, 1910, Los Angeles Cal  
J Archer O'Reilly, 1906, St Louis, Mo  
J S Kahn, 1904, San Antonio, Tex.  
S Judd Beach 1905 Portland, Maine  
R Russell Best, 1922, Omaha, Neb  
Everett E Angle, 1921, Lincoln, Neb  
H E Chamberlain, 1921, Minneapolis, Minn  
Horatio Sweetser, Jr 1921 Minneapolis, Minn  
Philemon E Truesdale 1898 Fall River, Mass  
Walter P Bowers, 1879, Clinton, Mass

Several other graduates of the School were in the city, but were unable to attend because of other engagements

## BOSTON MEDICAL LIBRARY

### EXTENSION COURSES FOR RURAL PRACTITIONERS

THE problem of keeping abreast of the progress of medical science is a serious one To do so implies that the busy practitioner takes two or three of the best journals and reads them seriously, attends medical society meetings in his own locality and goes to one or two of the larger State or National Annual Conventions, where through intercourse with his confieres and by listening to papers he learns of what is going on To do this in the midst of the exacting calls of a general practice is more than all but a very small minority of men will undertake Attending meetings takes time that many feel they can ill afford Reading journals at the end of a fatiguing day is a profitless endeavor which, by the majority, is soon abandoned Post graduate courses cannot be looked upon as a substitute for a vacation The agents of drug houses and the purveyors of physiotherapeutic appliances bring about the only contacts with the outside world of medicine which many practitioners suffer themselves to enjoy If there is a local hospital there is in it, sometimes, an incentive as well as an opportunity to bring oneself a little more in touch with what is going on Borrowing from the University extension movement, which has been so successful in meeting the wants of individuals in academic fields, there have been quite a few

attempts to carry this idea into medicine. Geographical considerations determine to some extent the way in which this is undertaken. North Carolina, Pennsylvania, Wisconsin and Michigan, to single out a few where a scheme of this sort has been carried out, have been very successful in their endeavors. New England presents many of the same problems that the States above mentioned do, so far as the isolation of rural practitioners is concerned, and there is a serious dearth of young physicians in these communities. Neither is it at all likely that efforts to lure them into the country will prove successful until they see the opportunity to secure some of the post-graduate advantages which are enjoyed by those who have taken up their practice in the larger centers of population. Again New England is suffering, because two of its medical schools have been forced out of existence, schools where its native sons were willing and could afford to go and from which upon graduation they were far more likely to return to their own homes than has been the case with the comparatively few who could get together the means to take them to distant cities. The widespread distribution of the small cottage hospital throughout New England, would make the problem of carrying extension courses in medicine to these hospitals, which are frequently located in small towns providing service to a considerable territory, a comparatively easy one. Instead of the local doctors having to take time off for occasional post-graduate training in a remote city, courses could be brought to the practitioner with such frequency as his appetite for experiences of this sort seemed to demand. The expense would be less than going to the city and all the physicians in the section could be accommodated at once. Furthermore the distracting features which characterize the big meetings would be removed and more good proportioned to the unit of time spent, would be obtained than from the large meetings which have taken on the characteristics of a junket for many who attend. These small community hospitals could be made the repositories of the sort of medical literature they need, drawn from the large metropolitan medical libraries. If this were done and periodic extension clinics held in these hospitals and centers, a taste for medical literature and a desire for progress would be cultivated and it would soon be recognized that the time spent in taking advantage of such opportunities would be well spent. This is something to the accomplishment of which the New England Medical Council might well devote some of its energies. The level of practice would be raised where it needs it so that the public would benefit, the profession would be stimulated to better work, the medical schools would doubtless indirectly profit by securing some matriculates of the right sort from rural communities; the hospitals would give better service, for the reason that making them a base for in-

struction invariably has that effect, and it may be that Dartmouth and Bowdoin would reestablish their medical departments on a four-year basis and help to solve the problems growing out of the scarcity of general practitioners in New England.

For those who recognize some of these problems as existing for New England and who are interested in their solution the Library will put out the literature on certain of the extension-service schemes that have been in operation in other localities. This will be done during the week of June 24th.

## MISCELLANY

### NORFOLK COUNTY HEALTH ASSOCIATION STUDY

The Norfolk County Health Association Inc., has just completed a study of 205 children who were sent to the Norfolk County Health Camp. St. Augustine Farm to the Sharon Preventorium between the years 1924 and 1927. In this study, 22 of the 28 towns in the County have been represented.

These children were referred to the Camp through the Ten Year Program Clinic of the State Department of Health dispensaries, school physicians, private physicians and other sources because of the need of supervision for the youngsters. Out of this group 67 were referred for suspicious tuberculosis, 82 contact tuberculosis and 56 because they were 10% plus underweight. Most of the children were required to go to Camp only once. Only 31 were sent twice, 12 three times and 5 four times. Investigation showed that 10 came from very good home surroundings, 34 from good, 61 from fair, 24 from poor, 15 from bad and 61 cases from unknown surroundings. A check of these home conditions in 1928 showed no material change.

At present there are 193 of these children still living in the County of the other twelve three are dead from accident and nine have left Norfolk County. In cases where the children have moved care has been taken to notify the proper authorities so that adequate supervision may be maintained. Of the 193 ninety-seven have gained, thirty no gain or loss and nine are in hospitals or preventoria.

Much praise is due to the Norfolk County Health Association Inc., which has made remarkable progress in the work for prevention of tuberculosis and represents one of the leading counties in the State striving for its control and elimination.

### NEW YORK MEDICAL CENTER

The New York Medical Center continues its rapid advance toward completion. Starting on June 4 the Sloane Hospital for Women began to be moved to the new center, a process that consumed about two weeks. The Presbyterian Hospital at the Center is already operating to capacity and the College of Physicians and Surgeons is partially functioning. The Squier Urological Clinic is in operation and the Presbyterian Hospital School of Nursing now has 152 student nurses all living in the Anna C. Maxwell Hall. The Vanderbilt Clinic will move to the Center on or about July 1. The New York Psychiatric Institute and the School of Dental and Oral Surgery of Columbia University in the fall and the

Neurological Institute about the first of January, 1929 No exact date has as yet been set for completion of the Babies Hospital new building

## CORRESPONDENCE

### OFFICIAL ACTIONS BY THE BOARD OF REGISTRATION IN MEDICINE

The results of the Board meeting of June 7th are as follows

Dr James H Morris, of New Bedford,—laid on table until next meeting

Dr F W Doyle, of Northampton,—suspended for one month on charge of gross mis-conduct as shown by revocation of his prohibition permit

Dr Peter Kane,—registration suspended for three months on the charge of gross mis-conduct in the practice of his profession and the registration of

Dr Francis F Henderson was suspended for one month on the ground of gross mis-conduct in the practice of his profession

FRANK M VAUGHAN, *Secretary*

## NOTICE

Remember to file Narcotic Registration papers before July 1

## REPORT OF MEETING

### THE LAWRENCE MEDICAL CLUB

The monthly meeting of the Club was held Monday evening May 28, with Roy V Baketel, M.D., 302 Broadway Methuen The Chairman for the evening was J Forrest Burnham, M.D A paper entitled 'Advances in Diagnosis and Treatment of Heart Disease' was read by Channing Frothingham, M.D., Boston

The Chairman described the plan which the Massachusetts Medical Society is putting into operation, by which through individual subscriptions, from Fellows an amount of \$125 000 is desired with which to purchase a headquarters for the parent Society Essex North District Medical Society has appointed a committee of 32 each one of which will interview six members before July 15 1928 The money will be sent to A K Stone M.D, Treasurer of the State Society, Auburn Street, Framingham Centre Massachusetts for the Building Fund With a Fellowship of 4422 in the State Society an average subscription of \$31 00 will raise the required amount

The Lawrence Medical Club, at this meeting endorsed the morbidity survey which is now being made in Lawrence, June 4 to 30 inclusive by the State Department of Health

## SOCIETY MEETINGS

June 21—Union Hospital in Fall River Detailed notice appears on page 926 Issue of June 14

December 3 7—Radiological Society Convention Detailed notice appears on page 712 Issue of May 17

## BOOK REVIEWS

*Filterable Viruses* Edited by THOMAS M RIVERS.  
Williams & Wilkins Company 1928 Pp 428

This volume deals with the general aspects of the filterable viruses and detailed studies of certain members of the group that have attracted attention recently One of the most valuable chapters from the point of view of the laboratory worker is that by Mudd on filters and filtration There are few authoritative articles on the various types of filters and their peculiarities In this section by Mudd is a useful and comprehensive summary of our present knowledge

The chapter dealing with intercellular pathology in virus diseases is also of considerable interest, particularly to the cytologist. Amoss contributes a valuable review of poliomyelitis The bacteriophage is also included in this group of diseases and the section on this subject, written by Bronfenbrenner, is highly stimulating

A valuable feature of the book is a carefully prepared bibliography, and in addition there are a number of excellent illustrations

*The Ultra Violet Rays* By ARNOLD LORAND, M.D (Vienna) Published by F A Davis Company, Philadelphia, 1928

This book may have been written for laymen rather than for physicians It presents a rather general and at the same time a rather superficial discussion of ultra violet therapy For the laymen a certain amount of interest and enthusiasm might be aroused, but for the physician and other scientific minded individuals there is little of value Even on the subjects on which the author lays most stress, namely, preventing the change in color of hair and preventing loss of hair, one gets the feeling that he has not proved his points, even though the rays are useful in certain scalp conditions There is considerable repetition, there is too much vagueness there is too much reference to endocrine glands, and to the sympathetic nervous system, and nervous conditions in general to make the book one of real value to the medical man

*An Elementary Text Book of General Microbiology* By WARD GILTNER P Blakiston's Son & Co, Philadelphia, 1928

This book contains a surprising amount of information about microorganisms Their morphology, culture and physiology are well described, there are excellent chapters on applied microbiology, as well as on microbial diseases of man, other animals and plants The material has been carefully chosen with a view to general acceptance and the purpose of the book, and the errors are few The consistent use of the newer classification and terminology will be of help to older bacteriologists and other microbiologists One might question the author's sense of fitness in using on page 212 cuts of pasteurizing plants that are so favorable to the firm supplying them Their omission, the deletion of the many 'verys' in the text, a better definition for epidemic on page 266 and the amplification of the chapters on the structure of bacteria and their chemical composition, and of that on enzymes would leave the reviewer with only complimentary things to say of this useful and interesting text book

# The New England Journal of Medicine

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## The Massachusetts Medical Society

### PROCEEDINGS OF THE COUNCIL

ANNUAL MEETING, JUNE 5, 1928

THE annual meeting of the Council was held in the Ball Room of the Bancroft Hotel Worcester, Tuesday, June 5, 1928 at 12 o'clock noon. The President, Dr John M Birnie of Springfield, was in the chair and the following 119 councilors present

BARNSTABLE  
W D Kinney

BERKSHIRE  
P J Sullivan

BRISTOL NORTH  
F H Dunbar  
W H Allen  
F A Hubbard

BRISTOL SOUTH  
R B Butler  
G H Hicks  
W A Nield

ESSEX NORTH  
G E Kurth  
E S Bagnall  
J F Burnham  
H F Dearborn  
T R Healy  
F S Smith  
F W Snow  
W D Walker

ESSEX SOUTH  
J A. Bedard  
W T Hopkins  
J F Jordan  
W G Phippen  
R E Stone

FRANKLIN  
H G Stetson  
G P Twitchell

HAMPDEN  
E P Bagg Jr  
J B Atwater  
E A. Bates  
J M Birnie  
E L Davis  
A J Douglas  
H D Gafney  
E A Knowlton  
S A Mahoney  
A G Rice  
J P Schneider  
G L Steele

HAMPSHIRE  
A J Bonneville  
J G Hanson

MIDDLESEX EAST  
R R Stratton

MIDDLESEX NORTH  
J H Lambert  
J A. Gage  
J E Lamoreux  
G A Lether  
G F Martin  
J A Mehan

MIDDLESEX SOUTH  
A. W. Dudley  
C F K Bean  
E H Bigelow  
W T Burke  
D F Cummings  
Cora E Harriman  
H J Keaney  
R W McAllester  
C E Mongan  
C H Staples  
E H Stevens  
Fresenius Van Nuis  
W S Whittemore

NORFOLK  
Victor Safford  
F G Balch  
D N Blakeley  
F A Bragg  
W L Burrage  
Samuel Crowell  
F P Denny  
D G Eldridge  
W A Griffin  
J B Hall  
A H Hodgdon  
H T Holland  
I R Jankelson  
E B Lane  
S F McKeen  
P R. Withington

NORFOLK SOUTH  
W G Curtis  
N R Pillsbury  
C A Sullivan

PLYMOUTH  
T H McCarthy  
W G Brown  
J J McNamara

C G Miles  
G A. Moore  
J P Shaw  
A. C Smith

#### SUFFOLK

Lincoln Davis  
A. W. Allen  
A E Austin  
J W Bartol  
Horace Blinner  
David Cheever  
R C Cochran  
A H Crosbie  
G S Derby  
J H Means  
T J O'Brien  
W S Parker  
W R Sisson  
I S Stone  
W T S Thorndike  
R H Vose

#### WORCESTER

P H Cook  
W P Bowers  
L R Bragg  
W J Delahanty  
G A Dix  
M F Fallon  
Homer Gage  
J J Goodwin  
R W Greene  
David Harrower  
A G Hurd  
A W Marsh  
L C Miller  
E H Trowbridge  
R. P. Watkins  
F H Washburn  
S B Woodward

#### WORCESTER NORTH

J H Kearney  
W E Currier  
C H Jennings

The minutes of the last meeting were read in abstract by the Secretary and as no omissions or corrections were noted they were accepted as read and as printed in the Proceedings of the February meeting. The President announced that the officers and Fellows of the Society were cordially invited to visit the United States Veterans Hospital at Rutland Heights any day between the hours of 3 and 5 p m. The Secretary read the names of the Nominating Committee by Districts and the following answered to their names: BARNSTABLE W D Kinney, BRISTOL NORTH F A Hubbard, BRISTOL SOUTH R B Butler, ESSEX NORTH T R Healy, ESSEX SOUTH W T Hopkins, FRANKLIN G P Twitchell, HAMPDEN E A. Bates, HAMPSHIRE J G Hanson, MIDDLESEX NORTH J E Lamoreux, MIDDLESEX SOUTH E H Stevens, NORFOLK D G Eldridge, NORFOLK SOUTH C A Sullivan, PLYMOUTH J P Shaw, SUFFOLK David Cheever, WORCESTER David Harrower, WORCESTER NORTH W E Currier. The committee retired.

The appended reports of the Committee on Membership and Finance both on membership and finance were presented by Dr D N Blakeley. Each was accepted and its recommendations adopted, by vote.

REPORT OF COMMITTEE ON MEMBERSHIP AND FINANCE,  
ON MEMBERSHIP

The Committee on Membership and Finance makes the following recommendations as to membership

1 That the following named seven Fellows be allowed to retire under the provisions of Chapter I, Section 5, of the By Laws

- 1 Dole, Mary Phylinda, Melrose, as of January 1, 1928
- 2 Francis, George Hills, Brookline
- 3 Goss, Arthur Vincent, Brattleboro, Vermont.
- 4 Marsh, Albert, South Natick
- 5 Rawson, George Wallace, Amherst.
- 6 Rice Florence Frances, Cheshire, as of January 1, 1928
- 7 Walsh Charles Joseph, Arlington, as of January 1, 1928

2 That the dues for 1928 of the following named two Fellows be remitted under the provisions of Chapter I, Section 6, of the By Laws

- 1 Brayton, Roland Walker, Dorchester
- 2 Donahue, William Francis, Watertown

3 That the following named seven Fellows be allowed to resign, under the provisions of Chapter I, Section 7, of the By Laws

- 1 Cameron, Isabel, Minneapolis, Minnesota, as of January 1, 1928
- 2 Kleiman, Shmaria, Detroit, Michigan, as of January 1, 1928
- 3 Kliger, David, Detroit, Michigan, as of January 1, 1928
- 4 Merrill, Charles Henry, Oskaloosa, Iowa
- 5 Nelson, Christian Augustus, Cambridge, with remission of unpaid dues
- 6 Sanford, Clarence Higgins, Exeter, New Hampshire as of January 1, 1928
- 7 Walker, Clifford Black, Los Angeles, California, with remission of unpaid dues

4 That the following named three Fellows be deprived of the privileges of fellowship, under the provisions of Chapter I, Section 8, (a) and (b), of the By Laws

- 1 Gordon, Louis
- 2 Holmberg Carl Lester Magnus, Campello
- 3 Kelley, Edward Paul, Woburn

5 That the following named thirteen Fellows be allowed to change their membership from one District Society to another without change of legal residence, under the provisions of Chapter III, Section 3, of the By Laws

Eight from Middlesex South to Suffolk.

- 1 Branch, Charles Franklin, Allston
- 2 Breed, William Bradley, Chestnut Hill (Newton)
- 3 Clay Charles Lancaster, Auburndale
- 4 Fitchet, Seth Marshall, Newton Center
- 5 Hiebert, Joelle Carnellus Belmont.
- 6 Newton, Francis Chandler Newton Center
- 7 O Halloran William Timothy Newtonville
- 8 Simmons Channing Chamberlain, Chestnut Hill (Newton)

Three from Norfolk to Suffolk.

- 1 Homans John Brookline
- 2 Preble William Emerson Brookline
- 3 Rockwood Ethel May, Roxbury

One from Suffolk to Norfolk

- 1 Spitz Jacob, Mattapan

One from Worcester North to Worcester

- 1 Bassow, George Joseph Athol

DAVID N BLAKELY, *Chairman*

REPORT OF COMMITTEE ON MEMBERSHIP AND FINANCE,  
ON FINANCE

Your Committee recommends

1 That a special appropriation of \$200 00 be made to cover the expenses of the Campaign of Education, conducted by the Committee on Cancer, during the last week of April, 1928, known as 'Cancer Week'. This is in accordance with the vote of the Council at its last meeting

2 That a special appropriation of \$250 00 be made to cover the expenses of the survey of the incidence of puerperal septicemia in Massachusetts in 1927 which has been made by the Section of Obstetrics and Gynecology and the expense of 1000 copies of a reprint of the group of twenty nine articles on obstetrical problems which have appeared in our MEDICAL JOURNAL, these reprints to be distributed under the direction of the Section

DAVID N BLAKELY, *Chairman*

The Secretary read the reports of the committees appointed by the Council in February to consider the petitions of the following five Fellows to be restored to the privileges of fellowship Harold E Diehl, Harry L Roberts, C Norbert Brady, Thomas J Cahill, Perry E Joslin, and it was voted to accept them and to restore the petitioners under the customary conditions. The report of the committee appointed at the same time to consider the petition of Horace G MacKerrow, for restoration to the privileges of fellowship, namely that it did not recommend his restoration, was accepted by vote. The following petitions to be restored were read by the Secretary and committees appointed to consider them respectively

For T F Grady	{ J A Bedard W T Hopkins Butler Metzger
For E F Pope	{ D D Scannell John Homans Malcolm Seymour
For Charles Dudley	{ L B Reed W G Brown N K. Noyes

Dr David Cheever read the report of the Standing Committee on Ethics and Discipline and it was accepted (See Appendix No 1) Dr J Forrest Burnham read two reports, one for the Committee on Medical Education and Medical Diplomas and one as a delegate from that committee to the annual Congress on Medical Education, Medical Licensure and Hospitals of the American Medical Association at Chicago last February. Reports accepted (See Appendix No 2) Dr Shields Warren read the report of the Committee on State and National Legislation and it was accepted (See Appendix No 3) The report of the Committee on Public Health was presented by Dr Victor Safford (See Appendix No 4) He spoke of the changes that might be coming in the teachings concerning the transmissibility of ultraviolet light by different tissues and of the dangers that the use of violet light lamps might cause

He called attention to two books published during the last year which he had found most interesting and useful, namely "Ultraviolet-therapy", a publication of the Burdick Corporation, a carefully written and concise exposition of the generally accepted theories with reference to the application of light therapy, also "Clinical Application of Sunlight and Artificial Radiation", by Dr Edgar Meyer, published by Williams and Wilkins Company, of Baltimore. This book has a large bibliography and is a good summary of the subject. Dr Safford's report was accepted. Dr Homer Gage presented the last report of the Committee of Nine, which has been in charge of the *Journal*, that committee being replaced by the new Committee on Publications, as defined in the Revised By-Laws. The report was accepted. (See Appendix No 5.) The Secretary read the report of the Committee on Cancer and it was accepted. (See Appendix No 6.) Dr. A. G. Rice read the majority report of the Committee on Insurance, signed by himself and by Dr C. A. Sparrow and Dr A. H. Crosbie presented a minority report. (See Appendix, Nos. 7 and 8.) In the discussion which ensued the minority report, which favored supporting exclusively the United States Fidelity and Guaranty insurance company, was approved by Dr E. H. Stevens and Dr J. A. Mehan and opposed by Dr J. H. Lambert. On the question of accepting the majority report, the motion to accept was lost by a standing vote of 52 in favor and 63 against. On motion by Dr Stevens it was voted that the minority report be accepted and that the committee be continued in office. On motion from the floor, duly seconded, it was voted at 1:45 o'clock p. m. to recess for half an hour for luncheon.

The Council came to order at 2:15 o'clock p. m. and Dr C. E. Mongan reported for the Committee on establishing a branch of the Woman's Auxiliary of the American Medical Association in Massachusetts. (See Appendix No 10.) Dr Mongan explained that the object of the Auxiliary is to extend the aims of the medical profession through the wives of physicians, that in order to organize a branch the President of a State Medical Society appointed "the capable wife" of a physician to assist the organizer of the national association in calling together the wives of the physicians who are attending a given meeting. If they vote to organize an Auxiliary the proper officers are elected. Dr Mongan's report was accepted and its recommendations adopted. Dr W. P. Bowers reported for the New England Medical Council, calling attention to the fact that the records of this organization have appeared in the *JOURNAL*, that the Council meets twice a year and that its meetings have been well attended by representatives of all of the New England state medical societies, that certain recommendations have been placed in print and submitted to medical schools as well as to the medical societies and that there-

fore it is expected in the immediate future to get the New England Medical Examining Board to come to some cooperative action with reference to reciprocity throughout the New England states. Report accepted. Dr W. G. Curtis read the report of the Committee on Clinics and Health Associations. (See Appendix No 9.) Motion was made and duly seconded to accept the report with its resolution. Dr J. H. Lambert opposed the motion on the ground that a majority of the committee had never been assembled, and that the report contained no specific charges as regards any particular clinics. He knew of no flagrant abuses in the Middlesex North District. Dr Curtis thought that voting by mail was parliamentary and quoted a passage from "Robert's Rules of Order" in support of his contention. Dr C. G. Miles spoke at length in support of the report and on the abuse of clinics in the Plymouth District as did Dr F. A. Bragg, Dr T. H. McCallister, Dr J. J. McNamara and Dr J. P. Shaw. Dr David Cheever recited his experiences with certain members of Plymouth District last year as chairman of the standing Committee on Ethics and Discipline, when said members had objected to the professional behavior of a Fellow in that District. This was previous to the appointment of the Committee on Clinics and Health Associations by the Council. The Chair pointed out that the resolution at the end of the report was not drastic in character, asking only that members be guided by the rules of the District society and that charges submitted by the secretary of a District in writing be investigated. An amendatory motion from the floor that the report lie on the table and the committee be continued in office was seconded by Dr Lambert but not accepted by Dr Curtis. This motion was lost by a voice vote and the original motion to accept the report was adopted. Dr T. J. O'Brien read the report of the Committee on a Permanent Home for the Society. (See Appendix No 11.) It was discussed by Dr R. E. Stone, Dr Cheever and Dr S. B. Woodward. On motion by the last named the wording of motion No 5, at the end of the report was amended to read "That the committee be given power to rent temporary headquarters for the Society", in place of, to "secure" temporary headquarters. The report as amended was accepted.

On proceeding to a consideration of the Revised By-Laws, a draft of which had been sent to every councilor, Dr Woodward moved and it was voted unanimously, that the Revised By-Laws be approved as printed and distributed.

The Nominating Committee brought in the following slate: For President Dr John M. Birnie of Springfield, for Vice-President Dr Peer P. Johnson of Beverly, for Secretary Dr Walter L. Burrage of Brookline, for Treasurer Dr Arthur K. Stone of Framingham Center, for Orator Dr George C. Shattuck of Boston.



No other nominations having been made from the floor ballots were distributed, marked, collected and counted and the President announced that the slate had been unanimously elected. The Chair nominated and the Council elected the appended committees for the year 1928-1929

### STANDING COMMITTEES

#### OF ARRANGEMENTS

James Hitchcock, E P Hayden, H Q Gallupe, T H Lanman, F H Colby

#### ON PUBLICATIONS

Homer Gage, J W Bartol, R I Lee, R B Osgood, E W Taylor

#### ON MEMBERSHIP AND FINANCE

D N Blakely, Algernon Coolidge, Samuel Crowell, Gilman Osgood, Homer Gage

#### ON ETHICS AND DISCIPLINE

David Cheever, W D Ruston, S F McKeen, Kendall Emerson, A C Smith

#### ON MEDICAL EDUCATION AND MEDICAL DIPLOMAS

P P Johnson, A G Howard, R L DeNormandie, H P Stevens, C H Lawrence

#### ON STATE AND NATIONAL LEGISLATION

The President, A W Maish, T J O'Brien, F E Jones, Shields Warren

#### ON PUBLIC HEALTH

Dwight O'Hara, E F Cody, R I Lee, T F Kenney, F G Curtis

#### ON MALPRACTICE DEFENCE

F G Balch, E D Gardner, F B Sweet, R P Watkins, A W Allen

### SPECIAL COMMITTEES

#### COMMITTEE ON THE NEW ENGLAND MEDICAL COUNCIL

James S Stone, W P Bowers, Kendall Emerson, B W Paddock, the President.

#### COMMITTEE FOR THE PREVENTION AND CURE OF CANCER

Robert B Greenough, F G Balch, P E Truesdale, Kendall Emerson, G H Bigelow

#### COMMITTEE ON INSURANCE

A G Rice, C A Sparrow, A H Crosbie

#### COMMITTEE TO COOPERATE WITH THE MASSACHUSETTS BAY TERCENTENARY INC

F A Washburn, G H Bigelow, E C Streeter, W P Bowers, John Warren

Dr E A Bates moved that the Section of Hospital Administration be revived and that a chairman and secretary for the meeting of 1929 be appointed by the Chair. This was seconded. Dr H G Stetson thought a standing committee on the same subject preferable to a section. The motion was lost on a standing vote of 18 in favor and 21 against. Dr F S Smith spoke on the operation of the Workmen's Compensation Act, the interest it had excited in the five District societies of Middlesex and Essex and introduced the following resolution and four motions

*Resolved That* as there is apparently a strong sentiment held by many physicians of the Massachusetts Medical Society, that hospitals caring for patients protected by the Workmen's Compensation Act, should be paid a cost rate of maintenance, and that some staff physicians who care for these patients should be allowed to charge for their services, and as the Industrial Accident Board has, in a recent decision, maintained its position denying the justice of these principles — Therefore, be it voted by the Council of the Massachusetts Medical Society —

1 *That* a committee be created to investigate the Workmen's Compensation Act, particularly in its application to hospitals and hospital staffs

2 *That* this committee shall consist of one member from each District Society, appointed by the Presidents of the respective District Societies, with the Assistant to the President acting as Vice Chairman

3 *That* this committee shall be authorized, with the approval of the Committee on Membership and Finance, to expend such money from the treasury of the parent society, as may be required to obtain legal or other advice, needed to assist in the investigation

4 *That* this committee shall report its findings and recommendations to the Council at the next quarterly meeting, or as soon thereafter as is possible

The resolution and motions were discussed by the Chair who pointed out that the whole question of Workmen's Compensation had received thorough treatment by the Recess Committee of the Legislature last year, that the law was made by the General Court and that unless it can be changed no results can be obtained. Dr S B Woodward, the only medical man on the Recess Committee said he was opposed to a general cost rate of maintenance, he had done what he could to raise the general rate of pay, which had been too low, he explained how difficult it is to find out the rates in many hospitals and therefore it is impossible to determine on any definite rate of pay, each hospital settling the matter with its staff. On motion by Dr J Forrest Burnham, duly seconded, the privileges of the floor were voted to Dr W H Merrill of Lawrence, a former counselor, who discussed the Workmen's Compensation problem from the standpoint of many years' study. He thought it a matter which rested between the hospital trustees and their staffs, the trustees have no right to use money which has been contributed for charity as compensation. Now and then the Industrial Accident Board has intervened between the trustees and their staffs. He thought that the formation of a committee would keep the question alive and crystallize the opinion of the profession. The resolution and motions were seconded by Dr A W Dudley and they were passed by a voice vote.

On motion by Dr L R Bragg it was voted to recommend to the House of Delegates of the

American Medical Association that two retired Fellows of the Massachusetts Medical Society, namely Dr Oliver Windsor Phelps, of Warren and Dr Elisha Shepard Boland, of South Boston, be made Affiliate Fellows of the American Medical Association under the terms of the By-Laws of that association. Dr W P Bowers spoke about the committee formed to find out the cost of medical care, headed by Dr Rav Lyman Wilbur, how desirable it is to determine the facts in such an important economic subject. The committee would need much money to prosecute their campaign, already it had published a pamphlet which sketched out the whole field to be covered. He moved That the Committee on Membership and Finance shall consider the advisability of recommending an appropriation of five hundred dollars to be paid to the Committee on the Cost of Medical Care and shall include its decision in the report to be submitted to the Council at the stated meeting in February, 1929. On being put before the Council the motion was passed.

The Chair called attention to a letter received from John Jackson Walsh, chairman of one of the committees of Massachusetts Bay Tercentenary Inc as regards having the cooperation of the Massachusetts Medical Society in arranging a suitable exhibition of hospitalization methods at the tercentenary. The Chair nominated and the Council appointed the following committee to act in cooperation for such a purpose: F A Washburn, G H Bigelow, E C Streeter, W P Bowers, John Warren. The following vacancies were filled by vote: L B Reed Plymouth, as Censor and C H Colgate as Commissioner of Trials, for the Plymouth District and C L Curtis as Censor for the Essex South District.

Adjourned at 4.13 p m.

WALTER L BURRAGE, *Secretary*

## APPENDIX TO THE PROCEEDINGS OF THE COUNCIL

### NO 1

#### REPORT OF THE COMMITTEE ON ETHICS AND DISCIPLINE

The Committee held five meetings during the year and its sub-committees held numerous conferences and investigations. The matters brought before the Committee were of the usual type but were both more numerous and on the whole of more serious character than usual. Indeed it seems to the Committee that whether due to the changing spirit of the times or to the increase of alien elements in the profession the ethical standards of physicians are tending to seek a lower level. No fewer than four Fellows were recommended to the President for expulsion from the Society. In three of these cases it has been recommended that their resignation be accepted in order to avoid the useless expense and the notoriety connected with a board of trial. These were all instances of the performance of or the attempt to perform illegal abortions. The fourth case is that of a Fellow who in a suit for malpractice against a fellow member in his testimony for the plaintiff made statements not justified by the facts and expressed

opinions which were not in accordance with medical experience or teaching. His license to practice was revoked by the Board of Registration in Medicine. This man has tendered his resignation but he has been recommended for expulsion and doubtless the appointment of a board of trial by the President will follow in due course. The conduct of another Fellow whose license to practice has been revoked by the Board of Registration has been the subject of prolonged and careful investigation by the Committee. The charges against him are of immoral conduct in his professional relations with a woman patient and it has been recommended to the President that he be asked to resign but the execution of this has been suspended since the Committee has learned that further evidence may be forthcoming.

Charges of unethical advertising have as usual occupied a great deal of the Committee's time and have presented the usual perplexing problems. One of the abuses which is creeping into the ethical practice of medicine is due in part to the employment by charitable hospitals and clinics of professional promoters of campaigns or drives for the collection of money. These professional managers not being themselves physicians are actuated by the standards of commerce rather than by those of a liberal profession. They are likely therefore to employ methods of publicity and advertising which are offensive to the traditional standards of our profession. Pictures of physicians are printed in the daily newspapers representing individual members of the Staff of these institutions in the performance of their merciful duties and articles extolling the professional work of these physicians are published as a recommendation to the public of the merit of the institutions which these gentlemen serve. Such publicity methods in these instances wholly ethical and proper in their purpose are pointed to with justice by other members of the Society when they are called to account for similar advertising of a more personal character. If great charitable institutions permit such advertising of the achievements of their professional Staffs and this is condoned by the Massachusetts Medical Society it cannot be expected that the similar but less conspicuous violations of our traditions on the part of individual Fellows shall be controlled by the authority of the Committee on Ethics and Discipline. The professional Staffs and Superintendents of medical charities should not permit themselves to be thus exploited by the lay trustees of the institution or by professional managers of campaigns for the securing of endowment.

If the Massachusetts Medical Society wishes to change its traditional attitude about advertising and to loosen or relax the principles which have always governed its members a new policy must be formulated by the Society and communicated to the Committee on Ethics and Discipline for its guidance.

A somewhat novel problem has been presented by the appointment by certain small hospitals throughout the Commonwealth whose Staffs are open of a supervising physician or surgeon who is charged with the duty of overseeing and if need be of criticizing the work of his professional colleagues of the community who may have private patients in the hospital with a view of insuring that all the work done in the hospital shall reach a certain standard of excellence. If such a supervisor is a man of ability and performs his duties conscientiously it seems clear that the good of the patients is served but it is also clear that such supervision appears to be meddlesome and offensive to the physician whose patient is the subject of investigation. Certainly in private practice such a relation of physicians would not be tolerated and the fact that the Staff is "open" rather than organized according to seniority or authority makes this relation as difficult as where

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On motion by Dr L R Bragg it was voted to recommend to the House of Delegates of the



the patient is ill in his own house. It is clear that where this arrangement exists it should be made amply clear by the governing authorities at the hospital that any physician who has a private patient there must expect to have his work overseen by the physician appointed as supervisor. It is also clear that in the exercise of his duties the supervisor must be governed by the greatest tact and consideration of the feelings of his brother physician. Any other attitude would lay him open to the charge of a violation of the traditional mutual relations of Fellows of the Society.

Numerous complaints and personal differences arising between physicians in the course of their practice have been referred to the Committee and the disputes reconciled or adjusted so far as possible. In some instances the matter has been referred to the President with the recommendation that he admonish a physician for conduct which verges on the unethical.

An important problem concerning the alleged unethical conduct of a free clinic which was before the Committee last year was turned over to the new Committee on Clinics authorized by the Council at its meeting in October and doubtless will be the subject of a report by that Committee.

Some complaints which have been made before the Committee have defied solution since the Committee has no Solomon among its members—and is not empowered to employ his methods. In such cases and many others in which, although abuses exist no ground is found for action, the Committee feels and hopes that it performs a useful function in reminding the Fellows involved that the Massachusetts Medical Society has certain standards of conduct for its Fellows and proposes through its Committee to try to maintain them.

It is a source of satisfaction to be able to report that a physician, recently charged and under indictment for the performance on a woman of an illegal operation, with a fatal result, whose action was called to the attention of the Committee, was found to be now not a member of our Society due to the fact that his resignation was secured by the Committee on Ethics and Discipline four years ago for a breach of our ethical code which was the logical antecedent of his present misconduct.

Throughout the year the Committee has frequently found it useful or necessary in the performance of its duties to consult with the Board of Registration in Medicine, whose records have been freely placed at our disposal. The Committee wishes to make grateful acknowledgment of the courtesy and cooperative spirit shown by the Board of Registration in this respect.

The Chairman in closing this report wishes to acknowledge the conscientious devotion of much time and strength on the part of all the members of the Committee to the performance of its duties—duties which, to say the least, are neither inspiring nor pleasant.

DAVID CHEEVER, *Chairman*

## NO 2

### REPORT OF THE COMMITTEE ON MEDICAL EDUCATION AND MEDICAL DIPLOMAS

A part of the work of the Committee has been the examination, for the purpose of recognition, of 26 diplomas from physicians desirous of appearing before the various Boards of Censors, the diplomas being from schools not on the accepted list of Medical Schools, as approved by the Council. The Committee has also worked in conjunction with the Council on Medical Education and Hospitals of the American

Medical Association on such Massachusetts matters as came under its jurisdiction.

Our Committee now submits a plan for a new activity which, with the Council's consent, it will endeavor to consummate. We feel that there is a plan coming within the field of Post Graduate Instruction by which the Fellows of this Society can be assisted.

It is proposed that during the coming summer a list of clinical subjects of interest to physicians will be arranged, and a corresponding list of physicians compiled. These physicians will be selected as competent to instruct in the subjects which are listed. The physicians will be asked to go about the State at the request of presidents, secretaries and executive committees of District Medical Societies and speak upon the especial subject upon which they are fitted. There will be an attempt to obtain the best talent and to present it in a systematic manner, with as many late adjuncts for the purpose of instruction as possible, with the hope that definite useful and up-to-date information may be available to physicians who are brought to the meeting centres of each District Society. It is possible that out-of-the-State men occasionally may be available as speakers. This service may be extended even to local clubs, which are usually composed of Fellows of this Society. It is proposed to pay the travelling expenses only, to those speakers who will accept such. The unexpended balance in the Committee's 1928 appropriation will suffice probably to use until the 1929 budget is made when the Committee will again report to the Council. This plan of Post Graduate Instruction is not new, but only in its application by this Committee. The Committee asks the support of the Council and Fellows generally in the interest of medical progress. Suggestions from the Council will be welcomed.

This part of the annual report of your Committee on Medical Education and Medical Diplomas is the Chairman's report as a delegate from the Massachusetts Medical Society to the twenty-fourth Annual Congress on Medical Education, Medical Licensure and Hospitals, at Chicago February 6, 8, 1928, under the chairmanship of A. D. Bevan M.D., of Chicago and under the auspices of the Council on Medical Education and Hospitals of the American Medical Association. T. J. O'Brien M.D., Vice-President, was present as a co-delegate for the Massachusetts Medical Society. There were twenty-eight papers presented, and since the detailed reports, with discussions, were printed in the *Journal of the American Medical Association* in the six issues March 10 to April 14 and are available to all no attempt will be made here to present an exhaustive review, but it is proper to mention a few items of value.

The papers of Drs. Bevan, Bardeen, Cutter and Bell, and that of Sir Walker of Edinburgh, and also that wonderful posthumous letter of Dr. Francis W. Peabody of Boston which has been so properly captioned by his friends 'The Soul of the Clinic,' may be found in the above mentioned issues.

Dr. Bevan's opening paragraph is as follows: 'I am sure that it will be interesting and profitable to review the changes that have taken place in medical education in America in the last 25 years the result of the effort made by the organized profession of this country the American Medical Association to elevate the standard of medical education and place it on a thoroughly sound and satisfactory basis. This whole movement owes its success primarily to the thorough reorganization of the American Medical Association which in 1901 converted the Association into an effective representative body covering the entire country and the entire medical profession, functioning through a house of delegates which

Report<sup>+</sup> appearing in the JOURNAL was issued by the Bureau after two previous reports given out on the same subject had been admitted to be erroneous

The results of the past year's work do not warrant the Committee in changing the conclusions which we stated a year ago regarding the use of ultraviolet lamps

As was then stated ultraviolet lamps have undoubtedly a field of therapeutic usefulness. The application of the radiations from such lamps for the treatment of disease has as yet made comparatively little advance beyond the empirical stage

The lamps are capable of producing harmful as well as beneficial effects

For the above reasons the Committee still insists that their use should always be under the supervision and control of the Medical profession

VICTOR SAFFORD *Chairman*

## NO 5

### REPORT OF THE COMMITTEE OF NINE

The past year has been eventful in the history of the NEW ENGLAND JOURNAL OF MEDICINE.

The outstanding points of interest are first the acceptance of the proposition made to the New Hampshire and Vermont State Medical Societies for the publication of the proceedings of these bodies. The first appearance of the New Hampshire material was in the issue of October 6 1927 and that of Vermont in January 26 1928. We are giving space once each month to these societies. This departure from our regular routine has seemed to be satisfactory to these two societies and we believe is of influence in welding some and later perhaps all of the New England States into the scheme of maintaining a journal representing the medical profession of this section of the country

The second matter of large interest was the change of name of the *Boston Medical and Surgical Journal* to that of the NEW ENGLAND JOURNAL OF MEDICINE. There were and are differences of opinion with respect to the propriety of this change. Almost universal regret was felt that the title which had stood for one hundred years of medical journalism sponsored by eminent men in Boston should be discarded but the ambition to increase the usefulness of the JOURNAL together with the possibility of an amalgamation which would strengthen medical interests in the New England States led the Committee in Charge to authorize the adoption of the present title

The completion of one hundred years under the former name and embarkation under the new designation seemed to warrant recognition by the Massachusetts Medical Society. This took the form of an evening dinner with post prandial speaking. All members of the Society editors of other medical journals and several prominent physicians were invited to attend this banquet. An enjoyable evening followed and the exercises are matters of history. Very general interest in the history of the JOURNAL was shown by letters from many who were unable to attend together with cordial wishes for future success

Evidence of the desire of medical authors to have their productions appear in this JOURNAL is shown by an excess of original articles submitted much beyond our capacity although we are quite regularly publishing more articles than in any previous year. For example the number of articles published in the first five months of 1928 was 143 while 94 were published in the corresponding period for 1927. There

were 1124 pages published in the same period which is 232 in excess of the record of last year

The average circulation is larger than ever before in the history of the JOURNAL and this has seemed to warrant an increase in our advertising rates by five per cent.

Another gratifying condition is found in a more prompt return to our average circulation after the annual revision of the mailing list to conform to the paid up annual dues. This may mean some credit to the JOURNAL as well as a desire of the Fellows to maintain standing in the Society

Since the fiscal year closes December 31 of each year it is impossible to give an exact financial statement, but it may be pertinent to mention that one large expenditure, that of about a thousand dollars is paid out of the appropriation for the JOURNAL for the publication of the Directory

It is perhaps proper to call attention to some of the difficulties under which we labor. The location of the JOURNAL quarters is not suited to the work performed because of the disturbing noises of busy adjacent streets and on the other side a large trunk line railroad. In warm weather the noise often prevents the use of open windows. The rooms for committee work of the Society are inadequate. Not infrequently officers or committees find themselves in competition for the only available room for Society business

Probably few persons have any realization of the complicated nature of the business and editorial details of publishing a weekly journal. In addition to the routine work of the office much time has to be devoted to giving opinions and facts to many desiring advice or information. Fortunately we have a staff which is always ready with advice and editorial material. The office force is loyal to the last degree and is called upon to work overtime much too frequently

Assistance is rendered to officers and committees of the Society as desired.

If the plans inaugurated by the President for adequate quarters for the Society are successful the JOURNAL force will be able to perform its duties with more comfort and efficiency

HOMER GAGE, *Chairman*

## NO 6

### REPORT OF THE COMMITTEE FOR THE PREVENTION AND CURE OF CANCER

The above Committee has the honor to make the following report. Application was made to the Council for an appropriation of \$200.00 to defray expenses in connection with the State Cancer Campaign which was conducted jointly during the week of April 23-25 1928 by the Massachusetts Branch of the American Society for the Control of Cancer the State Department of Public Health and by this Committee of the Massachusetts Medical Society

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A detailed report of the campaign is being prepared for publication but it may be said that the most cordial cooperation was received from the district societies and that the campaign is generally regarded as one of the most effective that has yet been conducted in this community

ROBERT B. GREENOUGH *Chairman*

<sup>+</sup>U. S. Bureau of Standards Report—Ultra Violet Transmission through Glass—19

practic or osteopathic or some other cult school That study is not quite finished yet, but in the main shows that a large number of the 3 000 continued to prepare themselves to apply next year Some of them finally succeeded in getting into a school that same year The study for this year shows that nearly 25 000 applications have been made for admission by nearly 11,000 individuals Of the 11,000 about 8 000 were accepted There are enrolled in the freshman class this year 6010 These figures can be used as an argument against the danger of a shortage of physicians One student applied to 37 schools and failed to get in Two students applied to 27 schools and finally got in There were 124 students who applied to 10 or more schools before they finally got in, and it is rather interesting that they did not all start at the top and work down, going to the strongest first Some of them worked up and got into some of the best schools in the country after as many as 12, 13, 14 or 15 trials We have the data as to why the rejections were made, whether the class was full or because of insufficient requirements, etc "

In closing this report, it is proper to recall that for many years the Massachusetts Medical Society, through nomination by the President and election by this Council, has been represented at this Annual Congress, at which the vital problems of medical education have received the important consideration they deserve

J FORREST BURNHAM *Chairman*

### NO 3

#### REPORT OF THE COMMITTEE ON STATE AND NATIONAL LEGISLATION

Owing to the fact that the Legislature is the same body as last year the duties of the Legislative Committee have not been as arduous as usual Dr James Stone has been of great assistance to the Committee

Dr Woodward's bill to extend compulsory vaccination to the pupils of private schools was introduced by Representative Washburn Three bills were introduced for Dr Padelford designed to nullify the present vaccination law Inasmuch as the Senate was the same body as that which defeated our vaccination bill last year it seemed unwise to the Committee to press the bill this year, and an agreement was reached whereby all bills for and against vaccination were withdrawn

A bill was introduced at the instance of the Dean of the Massachusetts College of Osteopathy to provide for a separate board of registration for osteopaths At the hearing this was opposed by representatives of the Massachusetts Osteopathic Society and by the State Board of Registration in Medicine Members of this Committee believed it was unnecessary for them to speak in opposition to the bill which was given leave to withdraw

An attempt was made to nullify the present statutory limitation in malpractice suits by inserting the words "or becomes known This could be susceptible to almost any interpretation even permitting suit to be brought twenty or thirty years after the alleged malpractice had been committed This bill was opposed by the Joint Committee on State and National Legislation of the Massachusetts Medical Society and the Homeopathic Medical Society by the Massachusetts Osteopathic Society, by the Massachusetts Dental Society and the Insurance interests The bill was given leave to withdraw

The other bills dealing with medical matters introduced were of minor interest and no formal action by the Committee was taken on them Adhering to its policy of restricting its activities largely to State legislation the Committee left the initiative in deal-

ing with matters of national legislation to the Bureau of Legal Medicine and Legislation of the American Medical Society

The Committee earnestly protested against the recommendation of the Senate Finance Committee to increase the Harrison Narcotic tax from one dollar to three dollars The tax was finally maintained at the one dollar rate.

The Committee also protested against the discrimination shown by the Treasury Department in refusing to allow physicians to deduct from their taxable income the expenses incurred in attending scientific meetings Unfortunately this injustice was not corrected

In preparation for the reintroduction of the compulsory vaccination bill into the new Legislature next year a circular letter was sent out to each member of the auxiliary committee requesting his help in ascertaining the attitude of candidates for the Legislature to this bill It was voted to authorize action by the secretaries during the summer months to forward the cause of compulsory vaccination of children attending private schools

The Committee was informed that Dr Charles P Sylvester, Chairman of the Board of Registration in Medicine, proposed to introduce a bill which provides for the annual registration of physicians The Committee voted to endorse the principle of this bill reserving action on the bill itself until its details are known

SHIELDS WARREN, *Secretary*

### NO 4

#### REPORT OF THE COMMITTEE ON PUBLIC HEALTH

The Committee on Public Health has held monthly meetings as usual during the past year Several matters coming before the Committee for its consideration have been the subject of recommendations which have already been acted upon by the Council

The time and attention of the Committee has however been devoted chiefly to a continuation of its efforts to secure information which might promote knowledge of the therapeutic usefulness of ultraviolet lamps so-called

In the *Boston Medical and Surgical Journal* for February 9, 1928 there was published an article\* prepared for the Committee by Professor W T Boyle and which was especially intended to show the proportion of the radiations of the shorter wave lengths given off by a mercury vapor lamp under different conditions common causes for variations in the character of the radiations from the lamps, the difficulty of determining by mechanical devices the proportion of radiations of various wave lengths and the impracticability in the present state of our knowledge, of attempting to regulate physiological action by instrumental methods

In the same number of the *Journal* there was reproduced at the request of the Committee a report of the United States Bureau of Standards showing the results of experiments intended to determine the varying degree of transmissibility to ultraviolet rays of different kinds of glass

It has become apparent to the Committee in its work in this field during the last two years that progress in the biophysics of light is being hampered by imperfections in the present state of our knowledge regarding the purely physical aspect of the subject Even regarding the matter of the measurement of the transmissibility of glass to ultraviolet rays it may be noted that the U S Bureau of Standards

\*The comparative efficiency of sources of radiation used in therapy Prof W T Boyle *Boston Medical and Surgical Journal* Feb 9 1928 Vol 197 No 3

Report appearing in the JOURNAL was issued by the Bureau after two previous reports given out on the same subject had been admitted to be erroneous

The results of the past year's work do not warrant the Committee in changing the conclusions which we stated a year ago regarding the use of ultraviolet lamps

As was then stated, ultraviolet lamps have undoubtedly a field of therapeutic usefulness. The application of the radiations from such lamps for the treatment of disease has as yet made comparatively little advance beyond the empirical stage

The lamps are capable of producing harmful as well as beneficial effects

For the above reasons the Committee still insists that their use should always be under the supervision and control of the Medical profession

VICTOR SAFFORD *Chairman*

## NO 5

### REPORT OF THE COMMITTEE OF NINE

The past year has been eventful in the history of the NEW ENGLAND JOURNAL OF MEDICINE.

The outstanding points of interest are first the acceptance of the proposition made to the New Hampshire and Vermont State Medical Societies for the publication of the proceedings of these bodies. The first appearance of the New Hampshire material was in the issue of October 6 1927 and that of Vermont in January 26 1928. We are giving space once each month to these societies. This departure from our regular routine has seemed to be satisfactory to these two societies and we believe is of influence in welding some, and later perhaps all of the New England States into the scheme of maintaining a journal representing the medical profession of this section of the country

The second matter of large interest was the change of name of the *Boston Medical and Surgical Journal* to that of the NEW ENGLAND JOURNAL OF MEDICINE. There were and are differences of opinion with respect to the propriety of this change. Almost universal regret was felt that the title which had stood for one hundred years of medical journalism sponsored by eminent men in Boston should be discarded but the ambition to increase the usefulness of the JOURNAL together with the possibility of an amalgamation which would strengthen medical interests in the New England States led the Committee in Charge to authorize the adoption of the present title

The completion of one hundred years under the former name and embarkation under the new designation seemed to warrant recognition by the Massachusetts Medical Society. This took the form of an evening dinner with post prandial speaking. All members of the Society editors of other medical journals and several prominent physicians were invited to attend this banquet. An enjoyable evening followed and the exercises are matters of history. Very general interest in the history of the JOURNAL was shown by letters from many who were unable to attend together with cordial wishes for future success

Evidence of the desire of medical authors to have their productions appear in this JOURNAL is shown by an excess of original articles submitted much beyond our capacity although we are quite regularly publishing more articles than in any previous year. For example the number of articles published in the first five months of 1928 was 143 while 94 were published in the corresponding period for 1927. There

were 1124 pages published in the same period which is 232 in excess of the record of last year

The average circulation is larger than ever before in the history of the JOURNAL and this has seemed to warrant an increase in our advertising rates by five per cent.

Another gratifying condition is found in a more prompt return to our average circulation after the annual revision of the mailing list to conform to the paid up annual dues. This may mean some credit to the JOURNAL as well as a desire of the Fellows to maintain standing in the Society

Since the fiscal year closes December 31 of each year it is impossible to give an exact financial statement, but it may be pertinent to mention that one large expenditure that of about a thousand dollars, is paid out of the appropriation for the JOURNAL for the publication of the Directory

It is perhaps proper to call attention to some of the difficulties under which we labor. The location of the JOURNAL quarters is not suited to the work performed because of the disturbing noises of busy adjacent streets and on the other side a large trunk line railroad. In warm weather the noise often prevents the use of open windows. The rooms for committee work of the Society are inadequate. Not infrequently officers or committees find themselves in competition for the only available room for Society business

Probably few persons have any realization of the complicated nature of the business and editorial details of publishing a weekly journal. In addition to the routine work of the office much time has to be devoted to giving opinions and facts to many desiring advice or information. Fortunately we have a staff which is always ready with advice and editorial material. The office force is loyal to the last degree and is called upon to work overtime much too frequently

Assistance is rendered to officers and committees of the Society as desired

If the plans inaugurated by the President for adequate quarters for the Society are successful the JOURNAL force will be able to perform its duties with more comfort and efficiency

HOMER GAGE, *Chairman*

## NO 6

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ROBERT B. GREENOUGH, *Chairman*



## NO 7

## REPORT OF THE COMMITTEE ON INSURANCE

In the past year some pertinent facts about malpractice insurance have been uncovered

First, there are to day only three companies issuing this form of insurance in Massachusetts, all others ceasing so to do because they had found the business unprofitable. Of these three companies two, The U S Fidelity & Guaranty Co and The Hartford Accident & Indemnity Co, are old line, general insurance companies, heavily capitalized, issuing many forms of insurance, the third, The Medical Protective Co, is much younger, is capitalized for less, and issues only one kind of insurance, physicians' liability. The Hartford Accident & Indemnity Co is not anxious for this kind of business and makes no active effort to get it the other two want it and solicit it. From many and reliable sources it can be truthfully said that, allowing for differences in capitalization all three companies are, in general, equally sound financially are rated equally high, are all equally reliable, all afford equal protection, and all render equally efficient service. The U S Fidelity & Guaranty Co and The Hartford Accident & Indemnity Co issue physicians liability policies the premiums for which are graded according to the risk experience for different medical specialties and this grading is practically the same by each company. The policy issued by The Medical Protective Co on the other hand, has a flat rate premium save for roentgenologists and radiologists, and all their premiums are less than those of the other two companies. In the main the policies of all three companies read much the same but they do vary somewhat in special features which naturally appeal differently to different physicians who are largely influenced thereby in their selection of a policy.

Secondly, it is estimated that deducting out of State members, doctors not in active practice but not retired and others in governmental and institutional work there are about 4000 members of the Massachusetts Medical Society who should carry malpractice insurance. Figures as of June 1, 1928, show that about 3000 are so insured or about 75%.

Thirdly, policy holders are distributed as follows in The U S Fidelity & Guaranty Co 1434 with a promise of 179 more, in The Hartford Accident & Indemnity Co, which declines to give out its figures not more than a few hundred and in The Medical Protective Co 1165.

Fourthly Massachusetts ranks as about the worst State in the Union in number and size of suits against physicians. Of the many reasons put forward for this unsavory reputation it is felt only three are worthy of mention unguarded remarks by doctors regarding the work and results of confrères unscrupulous lawyers eager to gamble for damages, and perhaps a too ready trend on the part of doctors and insurers to settle out of court rather than face the notoriety of a trial.

Fifthly the few instances in which it has occurred have proved the folly of the individual who carries malpractice insurance with more than one company. Instead of thereby doubling his protection, he quarters it for in case of suit he has invited divided opinion, shirking of responsibility, and confusion of effort.

From these facts certain conclusions are warranted. First, malpractice insurance affords physicians the best protection against suits unjust and otherwise. Every physician who so protects himself by so much more protects his confrères, so that if 100% are insured protection will theoretically at least, be like wise 100%.

Secondly, it seems impossible to enroll a majority

of the members of The Massachusetts Medical Society in any one company. For seven years The U S Fidelity & Guaranty Co has made every effort so to do, backed by the recommendation of this Society. During that period its premium rates have been part of the time lower, most of the time the same, and for the past year higher, than those of its competitors. In spite of this Society's recommendation, in spite of advertising in spite of urging and solicitation, this company has been able to enroll only about half of those insured. In the same seven years, with out recommendation or solicitation, The Hartford Accident & Indemnity Co has written a few hundred policies. The Medical Protective Co in the last four years—the period it has been active in Massachusetts—has by earnest solicitation, without any recommendation, and in the face of more or less opposition, insured nearly 1200 members. It would seem a waste of time again to discuss the merits of the argument whether or not it is wise or essential to rally under one standard. In a previous report it was pointed out that for reasons then stated men were choosing to insure with companies other than the one recommended. Your Committee was then convinced that it was wiser to urge men to insure than to drive them into a recommended company, and was doubtful at that time whether in the face of opposition the effort to obtain enrollment under one standard was worthwhile. Your Committee is now convinced not only that the effort is not worth while but also that such enrollment cannot be obtained.

Your Committee is therefore of the opinion that no one company be recommended, that the field be left open to the three companies now doing business in Massachusetts and that every member of the Massachusetts Medical Society be urged to take out malpractice insurance forthwith in one of the aforesaid companies any one of which is financially sound and can be trusted to give adequate protection and efficient service.

With this final report your Committee respectfully asks that it be discharged.

ALLEN G. RICE, Chairman,  
CHARLES A. SPARROW

## NO 8

## MINORITY REPORT OF THE COMMITTEE ON INSURANCE

I feel that the Council owes Doctor Rice a vote of thanks for the conscientious work that he has done in investigating the insurance situation in Massachusetts. I feel however, that Doctor Rice does not appreciate the gravity of the situation with which we are confronted. When one pauses to think that in the last six years there were 348 claims entered, an average of more than one out of every four physicians insured with the U S Fidelity & Guaranty Co, we must admit that we are facing a grave situation. It is logical to presume that the ratio has been as high in the other two companies in the field. It is this alarming increase in malpractice suits which has caused the other companies to withdraw from the field. Two of the big old line companies who formerly did business in Massachusetts still continue to do business in many other states at a lower rate than is now charged in Massachusetts.

If we are to accept Doctor Rice's report we are to admit that we are licked. I feel on the other hand that we have not commenced fighting. Most of the members of the Massachusetts Medical Society have not waked up to the problems that are confronting us. Let me quote a paragraph from a member that I am afraid represents the attitude of too many members. He says—"It seems to me that the insurance companies are more worried over the malprac

tice suits, and other conditions concerning the Medical Profession than the physicians themselves. Gentlemen I think the time has come to call a spade a spade and fight with our gloves off. It is only by the complete coöperation of all members of the Society that we can gain our goal. Doctor Rice says that the U S Fidelity & Guaranty Co and the Medical Protective Co of Chicago are on a par. With this I cannot at all agree.

The United States Fidelity & Guaranty Co has a complete claim department in Boston. They employ one man who is a specialist in this work, who devotes his entire time to the immediate investigation of these claims. They also employ another man whose duty it is to prepare these cases for trial. Henry V Cunningham their attorney is without exception the ablest trial lawyer on malpractice suits in the state, and to date they have not lost a medical malpractice suit. This company has capital and surplus of over \$18,000,000 and is in a better position to handle these claims than any other company that ever did business in Massachusetts. Since 1921 when their policy was approved by the Council they have insured only members of the Massachusetts Medical Society, a fact that has considerably increased the membership of the Society. Even if the company is convinced that the case will never go to trial or is outlawed under the two-year Statute of Limitations a complete investigation is made. Malpractice insurance is the most uncertain insurance written. No company can tell for years afterwards what the claims are going to cost or whether there will be any new claims entered which may be turned into fraud and tried years afterwards. The reason that this company has lost no cases is on account of the wonderful investigation preparation and trial. One case they tried in Fitchburg lasted 27 court days probably the longest trial ever held against a physician. This was won to the satisfaction of everyone.

Compare this record of the U S Fidelity & Guaranty Co with that of the Medical Protective Co of Chicago. They have no claim department in Massachusetts; employ no regular investigators and their agents have nothing to do with claims. In case a physician is sued I understand they send him a questionnaire a yard long with a request to fill it out and return it to Chicago. Then they notify him to get in touch with a certain law firm in case of any additional letters. Before the trial the lawyers make what investigation they can. By this time some of the nurses or other witnesses may be dead or out of the state. In the last few months they have lost four suits ranging from \$700 to \$14,000, two of these were medical and two dental. They have just come out with an additional clause making it a part of their policy both for defense and indemnity to protect a doctor against undue familiarity with a patient, slander, assault, etc. which in my opinion is contrary to law and public policy and yet certain physicians in this state say that the Medical Protective Co is on a par with the U S Fidelity & Guaranty Co. This I cannot agree with. I am not here to criticize the Medical Protective Co but by this brief comparison I want to show you that the Council showed good judgment when they approved of the U S Fidelity & Guaranty Co November 9, 1921, to represent the members of the Massachusetts Medical Society.

For the first time in the history of malpractice insurance a company has undertaken to write the business on a business basis and the U S Fidelity & Guaranty Co is now charging each doctor according to his hazard exactly the same as automobile fire insurance and other lines. According to the Insurance Commissioner's report of January 1, 1928, the Medical Protective Co had reserves for unpaid losses of \$1,202,276 capital and surplus of \$939,109 and

gross income of \$1,200,019. Taking into consideration the seriousness of the malpractice situation and the uncertainty of the claims there is no question in my mind but what the U S Fidelity & Guaranty Co., which is one of the oldest and largest companies in the field, is a safer proposition for the members of the Society to insure in than a company which does only one line of business. The U S Fidelity & Guaranty Co for work done during the first six years have had 348 claims entered and undoubtedly there will be a good many more for work done during that period that have not been heard from yet. The company in those six years lost over \$60,000 above gross premiums in that time and in my opinion if it had not been for its agents putting the business on a business basis last November this company would have dropped out of Massachusetts the same as the others have done. There is only one other old line company writing this business in Massachusetts and they frankly confess they do not want it and they are advising their agents not to solicit it.

Although in 1921 the Council voted to recommend the U S Fidelity & Guaranty Co no united effort has ever been made by the Society to get the members to coöperate. It seems to me that this is tremendously important. No scheme of this sort can be brought to a successful issue without a definite campaign of publicity. It has been proved conclusively to my mind, that such a campaign must be waged by the Society itself and not left to the insurance agents. Any communication from the insurance agents is looked upon as a matter of business. This is a serious business and the business of the Massachusetts Medical Society. When this policy was originally approved the agents guaranteed the company at least 2000 members and on November 10, 1927 there were only a little over 1300 members insured. Since the policy was put on a business basis the membership has increased so that at the present time there are about 1675 members of the Society insured with this company. This is over 20% increase in a little over six months showing that the doctors are appreciating the service rendered by this company and that the policy is now on a solid foundation.

We have two brilliant examples of what can be accomplished by a campaign of publicity in exactly this situation. I refer to the Maine Medical Association and the Massachusetts Dental Society. About four years ago the State of Maine went through a similar stage to what we are going through now. Many of the companies withdrew from the state and the others raised their rates to \$40 and \$45. The society arranged with one of the old line companies to write a similar policy to that of the U S Fidelity & Guaranty Co., approved by the society with a rate of \$16.75 for a \$5000 policy. Through the activities of the state society and their malpractice committee they have practically eliminated law suits in the state. There are about 800 members in Maine and approximately 600 of these carry insurance as approved by their society. A quotation from Doctor Bertram Brvant of Bangor, Maine, Secretary of the Maine Medical Association and Chairman of the Insurance Committee, reads—

"We have never sent out letters to the members of the association but always in my annual report I have taken the matter up and have also taken it up with the councilors of the various districts and have mailed them lists of members not insured in their society and have advised them to do personal work in getting in as many under the insurance plan as possible."

Up until a year ago we carried a medical defense—that is we paid the fees of our attorney for defending those cases not in

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by the numerous agents amongst the welfare workers who seem interested to teach the public that only in group medicine can they have their ailments properly diagnosed. They would have the people believe that group medicine is only practised in clinics. The reason for this is that all the clinics, with very few exceptions, are wide open for anyone who wishes to apply. This custom as we have stated before prevails only in the larger cities.

The abuses noted as most prevalent are

Free clinics generally are not only treating any patient who will apply but they are soliciting these patients through other health agencies. Nurses with rarely an exception are sending all their patients to free clinics. Hospitals are soliciting free bed donations with a promise that the donor may send in patients for free treatment, regardless of the financial status of the patient. Consultation clinics are found to be perhaps the worst offenders against the ethics of medicine. When consultation clinics first started the patients were required to have a letter from a doctor. Now practically every clinic has its consultation clinic or pay clinic connected with the free clinic, where the wheat is separated from the chaff and turned over to the pay clinic. Clinics for health examinations for children are being used with the aid of soliciting nurses to turn the patient against the practising physician by telling the parents of the children that only a specialist knows anything about children. Clinics at one time used to require a letter from a doctor, but now these clinics do not need the doctor as they have the health organizations whose nurses are in close touch with the patients and are out working for them at all times. One clinic in Boston has a night clinic where the doctors are paid so much per night. The patients are solicited for the doctor (the doctor gets his and the solicitor gets his). This is simple out and out fee splitting and soliciting. Another clinic in Boston charges people for minor operations a fee of from \$10 to \$35 and puts the money with the general fund. The doctor at this clinic gets nothing.

Perhaps the greatest growing evil in fostering clinic abuses is the nurse whether she represents the Red Cross, the Public School or the Public Welfare. If a doctor works in a clinic he is all right if he doesn't, then he is just out of luck. A doctor who has charge of health examination in a local Board of Health reports that he has still to find a patient who was referred to his own doctor by a visiting nurse.

Most of our hospitals with a public ward are governed by the following rule. No patient in the ward shall be charged for medical treatment. As interpreted by the industrialist, this means that any patient may gain admission to the ward through a free bed no matter what his ability to pay a private physician may be and once he has reached the bed nobody shall question his right to free treatment. These individuals that donate hospitals and free beds feel that the medical profession should willingly provide free medical treatment, in the interest of humanity alone. But the practical difficulties of such one-sided idealism in a ruthlessly commercialized age can be realized only by the medical profession. The physician must live and how in justice to himself and his family can he be expected to serve as the sole exponent of an idealism where virtue is its only reward?

We have placed officially before you what every member knew existed but a certain number of our members thought that any attempt to control these abuses which have grown to great proportions under the cloak of charity would be useless. Certain other groups are not in favor of taking any action against these abuses because they have lived their medical life in their environment, and perhaps have

prospered. Members of hospital staffs have aided or abetted the present procedure of keeping the wards filled and the clinics up to the standards especially in numbers of patients treated.

The parent society has not attempted to regulate the activities of health associations. The parent society evidently does not believe that the activities of these allied associations should be regulated. It has taken no action well knowing that in the practice of medicine we must follow and reflect our very commercial civilization. The industrialist is commercializing medicine. He has a system of his own. He attempts to lower the costs of living for his employee. If he has a large establishment he has an emergency room with a nurse. In the different departments he has a sub-nurse who gives first aid to the mechanic at the machine. This sub-nurse is not a trained nurse but usually a worker at the bench who has passed the examination in a first aid school. If the job is too big for the sub-nurse the patient is sent to the emergency room and if the nurse in the emergency room cannot handle it, a doctor is called who is in the employ of the factory. If the doctor cannot take care of it the patient is sent to the hospital and the rest of the treatment is free. We presume that in the future a nurse will get three or four years in some emergency hospital and when she is in the factory it will not need a doctor. This system applies to other ailments of employees as well as to industrial cases. We are of the opinion that these nurses are really practising medicine and not within the law. These nurses are not supposed to call the doctor if they decide that they can treat the condition. The State regulations of clinics state that a doctor must see every case. This is interpreted to mean that a doctor sees the case once and that a nurse may treat the case for an indefinite time without calling the doctor again. This interpretation may reflect something in the future when we know that visiting nurse associations are now opening registered clinics.

All these practices constitute an attempt to regulate the charge that shall be made for medical treatment. Some free clinics have raised the price of admission to the limit that the trade will stand. One hospital has raised the price of admission to \$1.00. This is supposed to be a charity clinic, but it looks like a business proposition pure and simple of the business manager of the hospital.

We should have some rights in matters pertaining to clinics where members of our society are employed with or without compensation. We should make regulations for the conduct of our members at these clinics.

In the Plymouth District conditions were such that it became necessary to pass the following resolutions.

Resolved That the Plymouth County Medical Society accepts the principle that its members—are ready—and willing to serve freely—and without compensation in—all free clinics which restrict their services to patients worthy of free medical attendance.

That members of this society refuse to treat patients at free clinics or at Graduated Fee Clinics who have not been referred to such clinics by their family physician. Applicants who have no family physician will be investigated by the Committee at clinics.

That members of this society shall not recommend for examination or treatment at such clinics patients able to pay a private physician.

That a Standing Committee of Five (5) be appointed whose duty shall be to investigate all Free and Graduated Fee Clinics pass on the eligibility of patients applying at clinics and to investigate and

sure. This year we felt that it was not fair to those who carried insurance to help pay the bills of those who were negligent, so we advised everyone to get insurance and ceased giving counsel aid.

'Every year something is done either through the County Secretaries or through my own office urging the men to take on protection.'

In our own state we have a fitting example of what can be done by cooperation. The Massachusetts Dental Society in 1915, approved of the U S Fidelity & Guaranty Co as their official company. They have sent out many letters on the stationery of the society and in their annual report each year they have urged all members to insure in this one company. Nearly all dental claims are investigated by their Secretary or the Chairman of the Insurance Committee. Through their efforts they have so reduced the claims that the company, last fall, increased their policy 50% without additional charge. There are about 1488 members of the Dental Society and about 950 of them carry insurance with that company. There are a great many dentists who carry no insurance at all. Quoting from the *Bulletin* of their society of June 1926—

Shortly after we had made our decision to continue having the U S Fidelity & Guaranty Co issue our insurance the Medical Protective Co reduced their rates to a lower figure than what was being charged by the U S Fidelity & Guaranty Co. Your committee feels that it was necessary for them to do this to be able to obtain any business at all and offset the prestige given the U S Fidelity & Guaranty Co by the action of the Committee and Officers of the Massachusetts Dental Society in naming the U S Fidelity & Guaranty Co as our company. We further feel that should the U S Fidelity & Guaranty Co through lack of the support of our members in placing their insurance as recommended by the committee or lack of cooperation furnished by the society in bettering conditions withdraw from writing this form of insurance as have the other large companies leaving but one company in the field, the rate would immediately be raised to a prohibitive figure. We are borne out in the previous statement by the actual experience of every insurance company that has written Malpractice Liability Insurance in Massachusetts where they have not had the cooperation of organized dentistry and medicine. This experience cannot be changed.

Let me quote too from one of the typical letters sent out over the signature of the President, Secretary and Chairman of the Insurance Committee of the Massachusetts Dental Society.

"This letter is sent to you at this time requesting your full cooperation as a member of the Massachusetts Dental Society in helping to overcome one of the most dreaded evils that the Dental Profession has to contend with—*Alleged Malpractice and Blackmail Claims*.

'These claims are coming at an increasing frequency and conditions in Massachusetts are now worse than anywhere else in the United States. Careful study has shown your committee that our entire membership must cooperate with our Officers if this condition is to be remedied.

"This advice shows that we must combine and cooperate 100% strong and stand back

of our Insurance Company, the United States Fidelity & Guaranty Co.

'Considering as we have, financial strength, completeness of Claim Department organization, our own experience of service rendered during ten years, the experience of all high grade companies with this insurance and particularly the necessity of stopping these claims by full cooperation, it is not advisable to make any change even for a temporary saving of a few dollars.

"We ask your help. Please fill out the enclosed card and return at once. If our records are to be full and complete we want to know who is cooperating with us in this very important matter."

Dr Gardner of Lowell hits the nail on the head when he says—"I believe, aside from what this company is doing, that cooperation among physicians would accomplish the most. In order to get more and better cooperation we need some missionary work in the society itself." I cannot emphasize too strongly that there must be more cooperation between the members of the medical society and the insurance company. If this is done there is no question but what rates can be reduced.

My recommendation is that our Malpractice Committee conduct a publicity campaign and endeavor to enroll as many members as possible in the company which we have chosen to represent us, the U S Fidelity & Guaranty Co. Gentlemen the situation is serious. If we accept Dr Rice's report and cease to recommend the U S Fidelity & Guaranty Co after six years of trial, I think they will cancel their policies and withdraw from the state.

ARTHUR H. CROSBIE

## NO 9

### REPORT OF THE COMMITTEE ON CLINICS AND HEALTH ASSOCIATIONS

At a meeting of the Council of the Massachusetts Medical Society, October 5, 1927, it was voted that a Committee on Clinics and Health Associations is hereby created, consisting of one member elected by each District Medical Society whose duties shall be to investigate Clinics and Health Associations.

Sixteen out of the eighteen district societies appointed members to the committee. Barnstable and Bristol North not electing members to the committee. A committee of five was elected to make a report. This committee voted that a questionnaire be sent to each district member and that any member of the society could also fill out the questionnaire. Only one district member failed to return his questionnaire.

We will not attempt to offer what individual reports contained as the reports of the members as a whole were rather distinctive in that there was the same common complaint of abuses in certain communities or there were no abuses to be noted, in other communities. Throughout the State the report of the members showed that the cities of less than 50,000 are practically free from the prevalent abuses—these will be later enumerated—that were found to be rather the rule in the cities of over 50,000.

We are unable to make any attempt at showing the numbers or percentage of patients treated at clinics who could afford to pay a private physician but it can be plainly seen in our investigation that the only thing that limits the number of patients who are able to pay for treatment at free clinics is that no more patients are willing to place themselves in the questionable position of accepting charity. There is an attempt to overcome this prejudice

as to any possible estrangement between the Library and the Society, should now do their share

It is therefore moved

1st—That the Committee on Headquarters be continued

2nd—That the votes passed at the last meeting of the Council defining the powers of the Committee be rescinded.

3rd—That the Committee be instructed to con

tinue its efforts to secure funds for Headquarters for the Society

4th—That the Committee be given full power to cooperate with other organizations

5th—That the Committee be given power to secure temporary headquarters for the Society

6th—That in any temporary or permanent headquarters proper recognition be given to any memorial gifts

THOMAS J O BRIEN

report on any case requested by the society or any of its members"

In this district nurses were given cards by the hospital which were distributed by the nurses to anyone who needed treatment. The nurses signed the cards, and a considerable number of patients who were being treated by physicians were solicited, with the result that the doctors lost these patients. These resolutions are, we understand, considered rather drastic or even radical by some of the medical profession. Some think that a large percentage of patients applying to clinics have no physician. A check up on this statement at the Brockton Hospital shows that only 6% of the patients treated at the clinic have no physician. Perhaps this showing could be further reduced by investigating the 6%. Most of us will agree that there is a need for supervision and regulation of clinics and health associations. We are of the opinion that investigations and regulations of clinics might be a right of district societies, rather than of the parent society. Local conditions and needs of clinics are perhaps best judged by those who reside in the district. Some clinics are run solely for commercial reasons, to induce or solicit patients to apply for free treatment, many of the latter being turned over to the doctor as private patients.

When a clinic is operated by an individual, and these methods are used the intent is rather obvious.

Teaching clinics and floating populations in large cities might require regulations quite different from those employed by smaller communities. We think that it is possible for resolutions to be adopted by district societies that will not conflict with the By-Laws of the State Society. While the district society could investigate and make regulations for local clinics, the Committee on Ethics and Discipline of the State Society could act in an advisory capacity. Disregarding local customs and regulations of district societies should constitute a breach of ethics of the State Society.

We are submitting to you for consideration the following resolutions

Resolved That members of the Society should be guided in their actions by the rules and regulations of their District Society. Disregarding regulations of a District Society by its members shall constitute a breach of ethics in the State Society.

Resolved That the Committee on Clinics and Health Associations investigate pay clinics and free bed service at hospitals. They shall call to the attention of hospitals that patients with means to pay should not be allowed the privilege of free bed service. That the soliciting of patients for free beds and clinics is unethical. That pay clinics where doctors are paid by the day or night or where there is a division of the fee per patient is a form of soliciting with fee-splitting which is not tolerated in the practice of medicine by members of the Massachusetts Medical Society. They shall investigate hospitals and pay clinics where charges against them are submitted in writing by the secretary of a District Medical Society. This resolution shall not apply to pay clinics that are owned and under the management of members of this society or pay clinics that require a letter of introduction from a physician.

WM. G. CURTIS, *Chairman*

#### NO 10

REPORT OF THE COMMITTEE ON A BRANCH OF THE WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION IN MASSACHUSETTS

The Committee appointed to consider the desirability of establishing in Massachusetts, a State Woman's

Auxiliary to the American Medical Association beg leave to submit the following report

The Committee recommends that the Massachusetts Medical Society give its approval, to the formation of a State Woman's Auxiliary to the Woman's Auxiliary of the American Medical Association

Respectfully submitted,

CHAS. E. MONGAN, *Chairman*

#### NO 11

REPORT OF THE COMMITTEE ON A PERMANENT HOME FOR THE SOCIETY

The plan to secure adequate headquarters for the Massachusetts Medical Society was adopted in order that the Society through its officers and committees might more adequately serve the more than 4400 Fellows and better fulfill its obligations to the community. When the present Boston Medical Library was built it was hoped that headquarters for the Society might be provided. Of recent years the crowding of the Library made this impossible. The Committee appointed by the Council at its last meeting considered the purchase of a house in Boston advisable and undertook to raise the needed funds. The plan was received with great enthusiasm in some districts, particularly in the western part of the State. Extremely generous subscriptions have come from that and some other districts. In some cities and towns every Fellow has contributed. The first gift was one in memory of the late Dr. Frank Pad dock of Pittsfield, a former President of the Society. The friends and associates of the late Dr. Ayres P. Merrill of Pittsfield, former Vice-President and a tireless worker for the Society, have made their contributions as a very touching tribute to his memory.

In the midst of the attempt to secure the necessary funds the Boston Medical Library came forward with a plan to unite the medical interests of the State. This greater and better plan which had seemed beyond reach is now possible.

The efforts of the Society may well be strengthened to establish not only a home for the Society but to help in making the Boston Medical Library in a new home under the same roof, an aid to every physician in the State. Allied medical interests may well be included in the new building. It is only through such union of all concerned for the betterment of medicine in its broadest sense that any appeal can be made to the public for aid in a matter concerning the future welfare of the Commonwealth.

Your Committee, therefore, recommends that it be continued and be instructed to raise such further funds as may be needed to secure adequate headquarters for the Society in association with a new building for the Boston Medical Library. In making this recommendation it is understood that the Library is now definitely pledged to undertake to raise adequate funds for a building large enough to meet its growth for many years. It is further understood that the Library is pledged to plan its home so that there may be a union of the medical and allied interests of the State under one roof. And it is further understood that money raised for the home for the Society will not be spent in any way which may conflict with plans for such a union of medical interests. Money contributed now to the Society will be devoted to the development of a much finer plan than had seemed possible to the Committee when it first met. Until this plan can be realized adequate temporary quarters may be secured.

Good faith with those Fellows who have subscribed so generously requires now that all others who are able to give and who have hesitated because of doubts

Hyd. 7/12



Diarticuli m  
partially filled  
with Desmuth  
Si ing fluid liq  
+ get bubble at 12

Duodenal Cap.



Tejun & Diarticula



## A CASE OF DIVERTICULITIS OF THE FOURTH PART OF THE DUODENUM\*

BY F. B. LUND, M.D., F.A.C.S.†

A SURGEON whose work leads him into the field of gastric surgery not infrequently has to deal with the common variety of duodenal diverticulum, which is the so called "acquired" form, and is associated with the scarring of the first portion of the duodenum by the cicatrices of ulcers. These acquired diverticula involve the first portion of the duodenum, are associated with ulcer, and all the coats of the bowel are implicated. A symptomatic cure, at least, is usually effected by treatment of the ulcer. For this purpose a gastroenterostomy is in most cases sufficient, but if the pocket is well-marked or extensive, it may be inverted by a purse-string suture in addition to the gastroenterostomy for the underlying ulcer.

The more interesting form of duodenal diverticulitis is, however, the congenital form, this is commonest in the second portion of the duodenum, but occurs less frequently in the third and even the fourth portion, and may, as in the case reported, be associated with congenital diverticulitis of the jejunum. The duodenum, during the development of the embryo, is the seat of extensive and complicated processes, characterized by great activity. From the second portion bud off the processes which develop into the liver and pancreas, the peritoneum folds over the duodenum and pins it down, the mesenteric vessels cross it, and its own complicated blood supply develops. There is said to be one period in the development when there is a solid blocking by tissue at the middle of the second portion of the duodenum, through which two blind ends have to come together from above and below. If they fail, the congenital stenosis of the duodenum, which is occasionally seen in babies' clinics, results. It is not strange that under these circumstances diverticula develop, and that they are often, as in the case reported in this paper, associated with accessory pancreas. In this case there was one accessory pancreas close to the base of the diverticulum and another several inches down the jejunum.

The commonest congenital diverticulum is a small affair, found usually at autopsy (because it does not cause symptoms) and appearing as a pocket into which the duct of Wirsung and common bile duct empty.

The diverticula which cause symptoms are those on the anterior upper and lower margin which fill with food and, if their base is small, may become infected and inflamed. They may, however, cause too few symptoms to require surgery, and it may be said that the majority of

them have been discovered during routine X-ray examinations.

The case here reported is interesting because the main diverticulum which caused the symptoms

1 Arose from the fourth portion of the duodenum and had an accessory pancreas in its base.

2 Extended behind the duodenum upward and to the right beneath the liver, where it lay behind the peritoneum.

3 Developed to the size of a Bartlett pear, with a long stem.

4 Showed a definite fluid level when filled with bismuth and could be seen to fill and empty.

5 On account of the length and narrowness of its base, it filled and emptied slowly, became inflamed, and was the cause of symptoms simulating gall bladder disease.

6 Was associated with numerous symptomless diverticula of the jejunum, which show plainly in the X-ray plates, but which caused no symptoms because their filling and emptying was unobstructed on account of the broadness of their bases. (They all lay along the mesenteric border of the jejunum and were about 3/4 inch to an inch in diameter, looking like little balloons.)

7 By its removal the symptoms were relieved.

Inasmuch as one congenital deformity is apt to be associated with another, it may be interesting to note that the woman had a cleft palate.

A recent review of the literature shows that the first case of diverticulum of the duodenum was reported by Chomel in 1710. Hartung reported a case in 1761 and Morgagni in 1839. Up to 1910 less than 100 cases had been reported. One of the most interesting articles on the subject was published in 1925 by Butler and Ritvo, roentgenologists, of the staff of the Boston City Hospital. Another very interesting article has been written by the roentgenologists, Case and Cole.

## CASE REPORTS

The case in question was seen in consultation with Drs. Prouty, Weston and Holmes at the Elliot Community Hospital in Keene, New Hampshire, on May 3, 1927.

The patient, S. S., age 63, housewife, entered the hospital May 2, 1927.

*Chief Complaint* Chronic Indigestion.

*Family History* Father and mother dead. Mother had stomach trouble for years.

*Present Illness* The patient has had more or less indigestion for years. During the past year this has become markedly worse so that for the past few weeks she has existed mostly on weak tea and crackers. She has lost considerable weight during the

\*Read before the Framingham Medical Society February 27, 1925.

†For record and address of author see "This Week's Issue" page 1013.

*Diadema* <sup>7</sup>  
*littorale* <sup>1</sup>

*Diadema* <sup>1</sup> *littorale*  
 showing a *Diadema*  
 passing behind it

*Diadema* <sup>1</sup> *littorale*

Fig 77

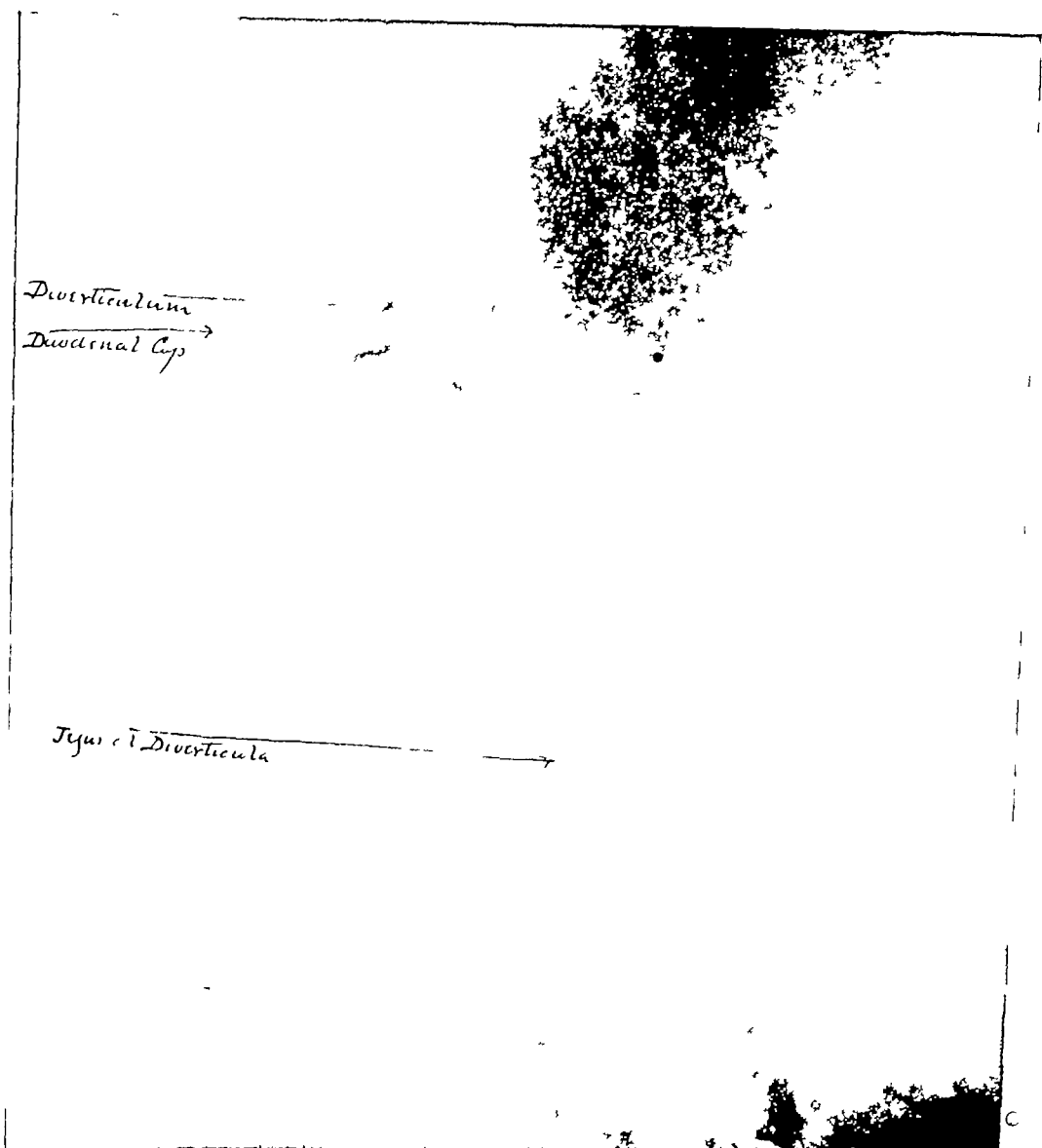


FIG 2

past year and a half. The patient is greatly annoyed not so much by acute attacks of pain but by more or less chronic indigestion with a feeling of distention particularly in the upper part of abdomen in the region of the gall bladder with more or less vomiting at no time has she had any severe sharp pain. She is greatly troubled by rumbling gas throughout the bowels almost continuously.

**Physical Examination** Examination shows a very thin woman. Has a cleft palate. Heart sounds clear, no abnormal respiratory sounds heard. Abdomen. No tumors felt, possibly owing to a marked kyphosis of the spine which is curved to the left and then forward bringing it up close to the anterior wall of the abdomen. At first, on palpation it resembles a tumor. (See X rays.)

**Provisional Diagnosis** The diagnosis of cholecystitis was made before the X rays were taken but the X rays showed plainly multiple diverticula so that the provisional diagnosis was diverticulitis of the third portion of the duodenum. The X ray work was done by Dr C H Jennings of Fitchburg and his excellent plates are here reproduced.

**Final Diagnosis** Diverticulitis of duodenum and jejunum.

**X ray Report** Long low stomach without filling defects 5" below pelvic brim erect very large, well formed duodenal bulb a 2" gas bubble above the duodenal bulb gradually filled with barium long narrow channel possibly from vicinity of duodenojejunal junction seen later, consistent with large diverticulum segmented nonadherent appendix marked saddle colon with marked stasis (Marked curvature of spine.)

**Operation** Excision of diverticulum. Upper right rectus incision. Marked arteriosclerosis of aorta and the common iliac. Stomach extended down into pelvis. First and second portions of duodenum apparently normal. Pylorus normal. Diverticulum of the fourth portion of duodenum extended retroperitoneally back of the first portion of the duodenum and projected up beneath the gall bladder. Gall bladder normal. The peritoneum over the diverticulum was divided the cyst enucleated and the finger forced it down back of the duodenum out through the posterior peritoneum, just to the left of the superior mesenteric artery. There was an accessory pancreas attached to the duodenum just beyond the diverticulum and another attached to the jejunum further down. In separating the neck of the diverticulum there was a slight leak of gas at the point where the accessory pancreas was attached. A clamp was placed on the pedicle of the diverticulum and another behind it. It was cut off and the stump was transfixed by a suture and then tied off. The stump of the diverticulum was inverted together with the accessory pancreas by a single row of No. 2 chromic Lembert sutures. Peritoneum closed over it with a similar row of sutures. On pulling out the jejunum there was found to be a long chain of diverticula extending down along the small intestine. The upper one was inverted and the intestine closed over it. The abdomen was closed in layers with chromic gut sutures reinforced by through and through silkworm gut. The operation took thirty five minutes.

**Post-operative Notes** After the operation the patient had no pain requiring morphia, vomited but once or twice and left the hospital in twenty days. I have heard from her recently that she is in good health.

#### DISCUSSION

The following discussion was taken from an article written by Cole and Roberts in 1920.

"The conflicting opinions on the causation of these diverticula may be summarized as follows.

"1 They are congenital in their nature representing abortive attempts at the formation of a supernumerary pancreas. This view is supported by the studies of Lewis and Thing, Lattelle, Falconer, and Tandler.

"2 They are congenital only in the sense that these pancreatic anlagen cause local defects in the musculature and the possibility of pouching results from age, intestinal atony or an increase of intraduodenal pressure. This view is held by Linsmayer from his exhaustive study of autopsy material (loc cit).

"3 An essential weakness at the fold of Vater according to Fleischman is a potential cause of herniation at this point.

"4 Traction from without from gall-bladder disease and atrophic pancreatitis has resulted in diverticula according to the observations of Keith and Roth.

"5 Pressure from partial obstruction below the diverticula was responsible for cases recorded by Keith and Sachs. Keith has particularly emphasized the importance of enteroptosis and partial obstruction at the duodenojejunal junction as the cause of back pressure.

"6 Attention has been called by Perry and Shaw, Mornihan, Linsmayer and Wilkie to the association of diverticula with duodenal ulcer. These diverticula are true herniations of the inner coats and are not to be confused with the pouchings of the uninvolved portions of the cap which are pouchings of all the wall."

In regard to the diverticula in the case reported, there can be no doubt of their congenital origin.

**"Differential Diagnosis** Diverticula must be differentiated skiagraphically from their pathologic conditions which fall into two groups.

"Group 1 includes those in which the roentgen findings occur before the ingestion of the opaque meal, and are caused by conditions such as renal calculi, gall-stones, calcified mesenteric or retroperitoneal glands, calcified Gleason's capsule, faecaliths, and pancreatic calculi. A diverticulum may hold sufficient food to make its visualization possible, especially if the patient has previously ingested salts of bismuth, barium, iodine, or bromine.

"Group 2 includes those pathologic processes in the gastrointestinal tract which may be visualized by an opaque meal.

"a Part of the cap may be deformed by induration or cicatricial contraction from an ulcer. That part of the cap which is uninvolved with such indurations and cicatricial contraction may be dilated and compensate for the contracted area and such dilations closely resemble certain types of diverticula.

"b A small diverticulum of the cap may with difficulty be differentiated from a penetrating ulcer. The diverticulum presents more of a puckered appearance with a small ostium and changes more than does the penetrating ulcer on a series of plates.



a limited number of specific excitants of the crises of hyperthyroidism but also these specific excitants lose their specificity and become impotent as far as causing a crisis is concerned when, after thyroidectomy hyperthyroidism has been replaced by myxedema. Thus in myxedema even adrenalin loses its specific effect, and injury, emotional shock, infection, hemorrhage asphyxia, anesthetics etc.,—none of them—will cause a thyroid crisis though each may cause death.

It is obvious, then, that thyroid activity is an essential factor in the production of the crisis of hyperthyroidism, but that it is not the only essential factor is seen in the fact that no amount of thyroid extract can cause an immediate acute crisis, although after a latent period of about 12 or more hours there may be an exacerbation of the symptoms. In the state of acute hyperthyroidism any one of the specific factors already mentioned will cause an immediate outbreak within a few minutes while an intravenous injection of adrenalin is instantly followed by a violent crisis which may result in immediate death.

Among the excitants of hyperthyroidism mentioned above the effect of each has been stepped up and made specific by some factor in the mechanism of hyperthyroidism itself, and yet in the normal individual each of these produces some of the phenomena of hyperthyroidism in a mild degree that is physical injury emotion acute infection, ether anesthesia hemorrhage, physical exertion and the injection of adrenalin cause increased action of the heart perspiration, increased respiration nervousness restlessness, tremor dilated pupils anxious facies etc.

It is significant that the injection of adrenalin alone causes all these symptoms. Is the secretion of the adrenals then the common factor? Strong emotion as Cannon has shown causes an increased output of adrenalin. Physical injury the excitant stage of ether anesthesia, asphyxia hemorrhage foreign proteins each may cause an increased output of adrenalin.

On the other hand, the factors which minimize hyperthyroidism or which have no effect such as sleep and rest water sedatives narcotics cathartics blood transfusion saline infusion are not known to increase the output of adrenalin. And of prime significance is the fact that no case of hyperthyroidism has been known to be associated with Addison's disease.

Another well known fact seems pertinent namely that although a ligation of a superior thyroid artery diminishes the activity of the thyroid yet a thyroid crisis which may even be fatal may follow ligation. Moreover although enough thyroid tissue may be removed to lead later to myxedema a fatal so-called hyperthyroidism may follow the operation. These two facts indicate that the moving factor in the postoperative hyperthyroidism is neither the current thyroid activity nor the throwing into the circulation of an excess of the thyroid

hormone by the surgical manipulation for an operation of equal magnitude on any other part of the body may cause an equal typical exacerbation of hyperthyroidism.

The above cited facts seem to indicate that the specific agent causing the thyroid crisis is adrenalin that only such factors as cause an increased output of adrenalin can cause the specific excitation which is called a thyroid crisis, and that the specific effect of these factors is due to the adrenalin which they cause to be secreted. On the other hand the factors and agencies that either mitigate or have no effect on thyroid crises have no power to increase the output of adrenalin. The acute crises, in fact may be called *adrenalism*. But adrenalism in turn can be produced only on the background of previously increased thyroid activity. Thus the syndrome which we call hyperthyroidism is really a *hyperthyr-o-adrenalism* for without the thyroid hormone, as in myxedema adrenalin loses its specific effect, and without the adrenal activity the thyroid would lose its specific effect as is shown by the fact that in Addison's disease the lowered metabolism and depression are not overcome by the administration of the thyroid hormone. Another established clinical fact also supports the idea that such a relationship exists between the thyroid and the adrenals namely that when the sympathetic innervation of the thyroid is broken, even incompletely the symptoms of the disease are minimized—metabolism falls, weight increases nervousness tachycardia etc. are diminished—a fact that indicates clearly that the thyroid is driven at least in great part by the vegetative nervous system that the vegetative nervous system is driven by the adrenal glands and the adrenal glands by the nervous system. In fact we must not forget that without the nervous system the brain and the vegetative nervous system the thyroid and the adrenals could not collaborate—could not play their essential rôles. Lower animals have adrenal glands a thyroid gland and a vegetative nervous system, but they are incapable of experiencing hyperthyroidism—only man with his higher brain development suffers from this affection.

Hyperthyroidism is obviously more than a thyroid disease, it is more than a thyroid-adrenal disease, it is a disease which involves the entire mechanism of man.

But we have now proceeded as far as our clinical facts and reasoning carry us. Let us seek in experimental findings another line of evidence. Happily a new line of trial evidence helps to fill the clinical gaps and carries the problem into the field of bio-physics.

#### BIO PHYSICS

We shall endeavor to interpret the nature of the specific action of the thyroid and of the adrenal glands on the tissues and organs of

"c Perforation of a small duodenal ulcer with formation of a small accessory pocket has been observed, and the differentiation from a true diverticulum can hardly be made except from the history of the case and shrinking of the pocket in the course of several months

"d Perforation of the duodenal ulcer into the gall-bladder or the passage of a stone through the gall-bladder and duodenal wall has given rise in several instances to the filling of the gall-bladder with the opaque meal

"e Isolated collection of barium may be found in the haustra of the colon several days or a very short time after the meal has been taken

"f Isolated collections of opaque meal may be retained in the crater of an ulcer on the posterior wall of the stomach or more rarely near the greater curvature. The differentiation has to be made by careful study of the series at various times after the ingestion of a meal in various postures"

This case calls attention to the statement in Opinion No 1 that diverticula are congenital in their nature and represent abortive attempts at the formation of a supernumerary pancreas. It is interesting to note that double supernumerary pancreas accompanied the case reported

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## NEW CLINICAL AND EXPERIMENTAL STUDIES OF THE INTERRELATIONS OF THE THYROID ADRENALS AND THE NERVOUS SYSTEM\*

BY G. W. CRILE, M.D., F.A.C.S.†

**E**IGHTEEN years ago, in an Ether Day Address at the Massachusetts General Hospital, I presented what was an attempt to apply certain principles of evolution to the interpretation of known biological and clinical phenomena. Since that time, my associates and I have continued along the same line of reasoning and have turned to physics for an added means of interpretation. It is in particular a clinico-physical exposition of the interrelations of the thyroid, the adrenals, and the nervous system that I shall now present. Since there are several distinct phases that must be covered in order that we may arrive at our conclusions, I am indeed grateful for the generous allowance of time at my disposal and shall hope not to make an inconsiderate use of the privilege.

*So-called Postoperative Hyperthyroidism.* The violent reaction which is called postoperative hyperthyroidism is identical with the phenomena seen in the crises of the disease itself and in the final phases of cases in which operation is not performed. In a case of well-developed hyperthyroidism a violent exacerbation of the disease may be precipitated by (a) emotional excitement—fear, anger, worry, etc., (b) physical injury—crushing tissue, surgical operations without local anesthesia, etc., (c) foreign proteins—as in acute infection, influenza, tonsillitis, absorption of wound secretion, etc., (d) asphyxia—as in obstruction of the trachea and in bilateral paralysis of the vocal cords, in cases of

pressure from a goiter, etc., (e) hemorrhage, (f) physical exertion, (g) ether anesthesia, (h) the injection of adrenalin.

Whether the crisis be precipitated by a single one, or by several of the factors named, or whether the crisis occurs merely in the natural course of the disease, the symptoms and—in fatal cases—the mode of death, are identical. What then is the common factor which is activated by these divergent exciting conditions? What can be the common factor in asphyxia, in excessive oxidation, and in emotional excitation, in tonsillitis, and in hemorrhage, in physical exertion and in inhalation anesthesia, in physical injury and in auto-intoxication? What common factor is activated by each of these conditions and by the injection of adrenalin? Each of these excitants alone, or combined with others, causes an identical phenomenon—a "thyroid crisis."

Before attempting to identify this common factor, let us look at the negative side and enumerate the conditions that tend to prevent or to mitigate the phenomena of hyperthyroidism or that have no effect upon them.

Rest and sleep and sedatives and narcotics are incapable of producing a thyroid crisis. Each tends to mitigate the symptoms of hyperthyroidism. Digitalis, strophanthin, atropin, sodium bicarbonate and glucose, food and water, local anesthetics, cathartics, calcium and magnesium, cold applications, have no effect. Even iodine and thyroid extract can cause no acute outburst of hyperthyroidism. Electrolytes and bromids produce no specific effects. Not only is there

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†For record and address of author see "This Week's Issue" page 1013.

haps it is the brain of the vegetative system, its probable function being to charge up—to energize the vegetative system. The embryologic origin of the medulla the type of its cells and the kind of tumors that arise in it, all point to the same inference.

In his illuminating work on the adrenal gland and his interpretation of its function along the lines of evolution which was referred to in my Ether Day Address, Cannon surely took an important step in the direction of this conception.

Now, if the adrenal gland energizes the nerve tissue of the body in some such manner as a power-station energizes an electrical system, and if our conception of the rôle of the adrenals in hyperthyroidism is correct, then we are in a position to find important clinical evidence bearing on this point, namely, to note the effect on the whole organism and particularly on the thyroid gland of removing one adrenal gland in cases of hyperthyroidism. It would at once be objected that the factor of safety of the adrenal tissue is so great that the removal of one adrenal would show no effect. In normal cases this would be true, but in hyperthyroidism, the adrenal, like the thyroid, has had its factor of safety fully taken up by excessive friction and one would expect, in accordance with our conception at least that by the removal of one adrenal, like the removal of half of the thyroid, the hyperthyroid phenomena would be correspondingly reduced.

We have performed this operation in four cases of hyperthyroidism, and in those four cases the immediate clinical results were comparable with those which follow the removal of one lobe of the thyroid gland. The pulse rate was lowered, the nervousness, sweating and weakness decreased the lost weight was regained, the untouched thyroid gland diminished in size and grew firm in texture, as after a successful ligation or a successful rest cure, and of equal significance although the operation was much more severe and of longer duration than a thyroidectomy, there was but little postoperative reaction, that is, little so called postoperative hyperthyroidism. And why should this not have been the case for according to our point of view one-half of the electric generative plant of the vegetative nervous system was removed. This evidence is too meager to be conclusive and is offered only as so much evidence in favor of our general thesis.

How interesting that the symptoms of hyperthyroidism are so completely "adrenal" in nature—the driven heart the activated nerves the increased metabolism the sweating the vasomotor instability, the dilated pupils, the increased pulse pressure all of these show a sensitization due to adrenalin. What is accomplished so strikingly by merely cutting off the sympathetic nerve supply to the thyroid gland may apparently be achieved on a much greater scale by

the removal of one of the generators instead of by merely severing some of the feed wires.

The thyroid is governed, at least largely, by its innervations, innervation is regulated largely by the adrenals, the adrenals are controlled by the brain and nerve centers though chemical activity probably plays a rôle. The thyroid certainly cannot originate hyperplasia, the thyroid has hyperplasia imposed on it, the adrenal glands cannot stimulate themselves, stimulation is imposed upon them, the nerve receptors cannot engage in self-excitation excitation is imposed on them by the physical and chemical forces of the external and internal environment. The entire nerve mechanism, the adrenals, the thyroid, and in a secondary sense other ductless glands act reciprocally, that is, nerve tissue, the adrenals the thyroid tissue collaborate in a stepping-up process—a stepping-up of activity. In certain individuals, because of some previously existing unknown factor, some chemical or physical unbalance, the normal controls become inefficient or are lost—and a reciprocal excitation continues after the environmental excitation that initiated the activity has ended.

In any event the disease we call hyperthyroidism displays the automatic mechanism of the organism in so dramatic a manner that we are able to view man as if under a physiologic microscope through which we may glimpse his normally concealed quietly-running automatic mechanism. The measurement of the actual potentials in the organs and tissues of the body, the relation of these potentials to activity and to death, give us an interesting clue as to the government of the body as a whole by the trigger action of a special sense here, of a brain center there. By these measurements we can see how the command of the organism is changed in kaleidoscopic fashion by the myriads of adequate stimuli. The extent of change in potential—whether it be a behavior reflex or a thought reflex—is a conjoint function of the thyroid, the adrenal, and the nervous system, controlling the rate of oxidation forming fleeting oxidation potentials and rapid movements of the electrolytes in and out of cells. The measurements of potential of conductivity, of capacity, and of temperature reveal the fundamental biophysical forces that control the organism. Interesting interpretations are suggested by this hypothesis. For example, how often we discern in the "hyperthyroid" high school or college girl a pathologically high scholastic standing. Her social personality is attractive because her potentials are high and her receptors are sensitive. If this same girl is subjected to the removal of too much of the thyroid gland, she will become mentally dull and physically uninteresting.

Let us think of man as having emerged from the sea, holding in his body the formula of the sea. The unicellular immobile ancestor of man required but little change in the concentration of the activating iodine, he required but little



the body in terms of certain physical constants, giving only the conclusions from the experiments, the detailed data of which will be published elsewhere

After a latent period of twelve or more hours iodine and thyroid extract increase the electric conductivity and the capacity of the organs and tissues of the body. In physiological terms, a change in the conductivity and capacity of a tissue signifies a change in the function and the activity of that tissue. These physical changes, like the clinical changes due to thyroid activity, are lasting and not fleeting. Increased conductivity and capacity means increased functional activity. These changes alone would increase oxidation, hence would increase basal metabolism.

These findings are comparable to those in similar physical measurements of plants, of growing tumors, of fertilized ova, etc. It may be urged that what we have measured is a change in the concentration of the electrolytes in the tissues or changes in blood supply. It is true that the changes in conductivity and capacity which we have measured are in part due to changes in electrolytic concentration, but changes in electrolytic concentration constitute an essential part of the mechanism of stimulation and appear coincidentally with changes in the permeability of the cell membranes. Moreover changes in conductivity and capacity are found in tissues after death, when such changes must be independent of the circulation. These electrical changes run parallel with the clinical phenomena.

Our experiments have shown that the effect of adrenalin on the capacity and conductivity of tissues and organs is wholly different from the effect of thyroid extract and of iodine, that is, while the effects of thyroid extract and of iodine are not manifested until after a considerable latent period, adrenalin causes an immediate and a striking change in capacity and conductivity. Moreover the effects of adrenalin last for only a few minutes while the effects of thyroid extract and of iodine last for hours and days. The most striking characteristic of the adrenalin effect, however, is its unexpected selective action on the organs and tissues of the body, that is, adrenalin causes a sharp rise in the conductivity, temperature and capacity of the nervous tissue, but shows the opposite effect on the conductivity, temperature and capacity of all other tissues, with one notable exception,—namely, the medulla of the adrenal gland itself. At first this highly selective action of adrenalin on the tissues and organs seemed incomprehensible until it occurred to us that differences in the potential of the organs of the body might well depend on this very effect.

*Electric Potential of Living Tissues.* It would appear that the organism as a whole has been evolved on the principle of electric control, and that it is the function of the adrenal

glands and of the vegetative nervous system to establish and to maintain and adaptively to change the differences in potential among the different organs and tissues, in order to meet the conditions of struggle and survival, such as fighting or escaping, mating and procreating, combatting infection, etc. If this conception be true, then not only is there a collaboration between the adrenals and the thyroid but there is a collaboration among all of the organs and tissues which are concerned not only with the struggle of life but with the maintenance of life itself. In accordance with this conception, if we were to measure the difference in potential between various organs and a neutral tissue such as fascia, we would expect to find that during life and consciousness a certain difference exists and that at death this difference is cancelled. We would expect to find that adrenalin would specifically alter differences in potential in the normal animal and that in myxedema it would exert but little effect on the difference in potential. We could expect that alterations in potential would be related to the physiologic activity of the various organs, and that the activity of the organs would be related to the thyroid hormone, which controls the conductivity for the longer periods, and to adrenalin, which controls the conductivity for shorter periods. These theoretical assumptions have been proved to be facts by the experiments performed in our laboratory by Dr Telkes.

We may assume that the thyroid hormone by increasing the permeability increases the activity of the cells and organs, of the brain, in particular. Increased permeability would make more effective every kind of stimulation. This would be one of the essential factors of nervousness—perhaps the mechanism by which it is produced.

In myxedema, on the other hand, the conductivity, capacity and potential are decreased far below the normal level, and in consequence, the permeability, hence the facility of stimulation is decreased proportionately. This would explain the decreased metabolism, the depressed facility for stimulation and the decreased bodily activities—dullness and lethargy—in clinical cases of myxedema. And as a climax to these observations we have found that when an animal is in myxedema, adrenalin has lost its striking control over the conductivity, capacity and potential,—a finding which parallels the clinical observation of the lack of effect when adrenalin is injected into myxedematous patients.

*Specific Reaction of the Medulla of the Adrenal.* We have found that the injection of adrenalin into the vein of the ear of a rabbit causes a sharp rise in the conductivity and the capacity of the medulla of the adrenal,—this effect being as striking as the effect of adrenalin on the brain—and in the same direction. It would appear from this finding that the medulla of the adrenal functions as nerve tissue, per-

repeated however, by other experimenters. Proof that ligation of the superior thyroid pole interrupts its innervation, therefore, is doubtful. We have practically given up ligation since iodine has come along and I have always been not at all certain that the effect of ligation has not been a psychic one rather than an interruption of nerve conductivity and interruption of vascular supply.

We are all indebted to Dr Crile, especially those of us who are dealing with thyroid disease. These experiments deal with some of the disturbances which are so confusing and difficult to interpret.

DR LUND: One of the most interesting points in Dr Crile's paper was the effect of the adrenals and other factors in increasing the effect of excessive thyroid. The interrelation of the thyroid and nervous system was studied in a different way by Dr E. B. Benedict and myself. We studied the effect of morphine on hypothyroid and hyperthyroid animals. The way the experiments were run was as follows: We determined the normal metabolism first. Then we determined the metabolism immediately after a dose of morphine, that is, one-half to one hour later. We gave the same dose of morphine proportionately to each animal and gave large doses always. The effect was that it caused a drop in metabolism of ten per cent. We then took out the thyroid, saving the parathyroid so that tetany would not occur. Then the metabolism was again determined and was found to be thirty per cent below normal. The same dose of morphine given to these animals whose metabolism was thirty per cent below normal caused a further drop of twenty per cent. We then brought the same dogs to hyperthyroidism by feeding thyroid or injecting thyroxin and repeated the dose of morphine. The metabolism was not decreased by the same dose of morphine. The reason we used metabolism as an index of action was because it is one of the few indices we could quantitate in the laboratory.

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SPEAKER FROM THE FLOOR: If the adrenal glands are removed, the blood sugar falls, and in Addison's disease the blood sugar falls very low. Is it conceivable that the failure to get thyroid crises in cases where the adrenals have been removed is due to a failure to mobilize the sugar?

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#### DISCUSSION

DR AUB I have heard Dr Crile speak several times and it has always been a pleasure, as he has a great many interesting ideas, and today is no exception. It happens that I am very glad to discuss his talk tonight, because I have done some work related to this subject. I am interested to hear him say that hyperthyroidism is a disease which is not limited solely to the thyroid, for I agree with that view. Some years ago I did some experiments to try to find out the relationship between the thyroid, the adrenals and the central nervous system. The way to determine this, it seemed to me, was through the metabolism, and we studied the effect on metabolism of these three factors.

We made animals hyperthyroid, anaesthetized them, took out the adrenals, and studied the effect. Our immediate results were different from Dr Crile's. We increased the metabolism by the administration of thyroxin and attempted to determine whether the increased metabolism produced in thyroxinized animals was due to thyroxin or whether it was dependent upon the adrenals and nervous system. The removal of the adrenals in these animals did not produce a drop in metabolism. We also found that denervation of muscles did not lessen the increased metabolism after administration of thyroxin. That is thyroxin increased metabolism directly, and not through the adrenal glands or through the muscular tremors. In further experiments we found that the removal of one adrenal had no effect on the metabolism, whereas removal of both caused a prompt reduction of metabolism.

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As far as the practical clinical problem is concerned, we must all learn the management and early diagnosis of these thyroid crises. Just as Dr Joslin and other men interested in diabetes have taught the family physicians the early diagnosis and management of diabetic coma, so must we teach the medical public the early diagnosis and prophylactic management of impending thyroid crises. We have seen these patients come into the hospital in such late stages of crises that the majority of them have died, and I think that if, in many instances, they were recognized early and properly treated, the majority would not have died. Had they had morphine, iodine, glucose and fluids early enough, many of the cases would not have been fatal.

Regarding the question of the vegetative nervous system and the thyroid, I do not know much, but I do feel that effect of ligation of the superior thyroid poles on the thyroid is very uncertain. We have no conclusive evidence that the thyroid is innervated by the sympathetic nervous system. If Dr Cannon's interesting experiments had been proved by repetition we would be in a better position to believe in this sympathetic innervation. He transplanted the phrenic nerve into the superior cervical ganglion with the idea that each descending impulse along the phrenic nerve would stimulate the thyroid, and obtained results in cats which he concluded showed evidences of thyroidism. These experiments have not been successfully

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Don't, by the way, refer to removal of the adrenal glands, it is only one.

Dr Henry John has followed a large number of cases as to blood sugar, and tried in crises to see whether he could influence the crises by insulin and glucose. At first it was thought that they were effective but afterwards it was decided that the results were not conclusive.

Dr Lund's work on morphine is certainly very interesting.

Dr Means also asked a question which I cannot answer—in what way does iodine influence the crises of hyperthyroidism?

In 17,000 patients with operations on the thyroid gland we have done a little over 2,000 ligations, and what a satisfaction it is for us to make a trial ligation in a few minutes' time. If we are in doubt as to whether the patient is a good risk, then a trial ligation is of great help. Then we may later do a double lobectomy with good results. The mortality is one in one hundred and fifty. I have had a sufficient number of catastrophes to go very cautiously. One must decide from his own experience and the kind of work he is doing what procedure to follow.

I appreciate the very kind attention which has been given to me, for my paper was altogether too long.

## JOHN WHEFLOCK ELLIOT, M.D.

BY ERNEST AMORY COPMAN, M.D., F.A.C.S.\*

**Editor's Note.** This biographic sketch of Dr. Elliot has been taken from a longer manuscript entitled "Doctor John Wheelock Elliot and his Part in our Local Surgical History." Dr. Elliot's contemporaries, Dr. Henry L. Morse, Dr. Alfred Worcester, Dr. T. J. Minot and Dr. T. W. Taylor, have made the selections and revisions. Dr. Copman's more detailed original manuscript in typewritten form will be placed on file at the Boston Medical Library and the Library of the Massachusetts General Hospital.

**DR ELLIOT'S** contemporaries may be surprised that I find his career to be so much of a landmark in our local surgical history. In writing of a surgeon who was my teacher and friend, I am thinking especially of the alumni of the interne staff who worked under him at the Massachusetts General Hospital in the years from 1886 to 1907. Belonging to a slightly younger

Henry Elliot, a lawyer and distinguished man in his state and Emily Ann Wheelock. He entered Harvard from Phillips Exeter Academy, graduating in 1871, and from the Harvard Medical School in 1878, having during the last year also served as interne at the Massachusetts General Hospital. He then studied abroad and began practice in Boston in 1880. In 1883 he married Mary Lee Morse of Boston.

Elliot's success in practice came early. His patients as a whole were of two classes, the rich and the poor. He was punctilious in his care of hospital patients. When on service at the Massachusetts General Hospital he gave them a larger share of his time and attention than did most surgeons. The house staff all knew that on his term of duty things would go well, the wounds would be clean, there would be no neglect, and his eye would certainly detect any lack of thoroughness, although his comment would never be sneering or rude. Yet we younger men knew that when he came on duty and we undertook any unusual responsibility which we felt we were competent to assume we would get his thanks and advice rather than adverse criticism.

After I started in practice in 1895 I used frequently to assist Dr. Elliot in his private operating, which then was done largely in the patient's home and only occasionally in private hospitals. At the time it was the right way and Dr. Elliot strongly believed that there was less danger than in a hospital. For instance, I recall helping him operate for a brain tumor in a small private house in a suburb. We did hysterectomies and gall stone operations with as little academic pomp and, as a rule, quite as successfully as we do now with all our ritual. I often think that the young surgeons of the era of early asepsis were more careful than those of today. On November 26, 1886, Dr. Elliot wrote, (*Boston Medical and Surgical Journal*) "In doing a laparotomy I have always taken the entire charge of my instruments and sponges, never allowing assistants to clean or prepare them", but by the time I assisted him, 1895, he was ready to leave the preparations to me. This was ten years after he had introduced the fundamental innovation of gauze sponges, which was a most important step toward aseptic surgery, more important than any single point in the new aseptic technique. How easily we forget the origin of such indispensable steps! Both Dr. A. T. Cabot and Dr. M. H. Richardson credited this innovation to Dr. Elliot. How simple it seems now to have a sponge that can be



JOHN WHEFLOCK ELLIOT, M.D.

generation just too late to see the advent of antiseptics, we received our hospital experience when modern surgery was practically established, and did not realize that the young men who were our immediate seniors had fought the conservatives of the previous generation and thus made the way easy for us. Much as we admired the other members of the staff of that generation, I believe we are especially indebted to Dr. Elliot, although at the time we hardly realized his mental influence on his seniors and colleagues or the effect of his example on our own minds. We were too young and too busy to see what we owed him.

Dr. Elliot's ancestors settled in New England in 1750. His great grandfather was a soldier at Bunker Hill. His grandfather's name was spelled with one L, but the spelling was later changed to accord with that of the Scottish clan from which the family came. He was born in Keene, N. H., on October 10th, 1852, son of John

steamed or boiled' Previous sea sponges were universally used They could not be boiled and had to be soaked a long time in antiseptics and even then could never be made clean His first sponges were of absorbent wool sewed up in gauze They were better than those we use now, but the trouble of sewing gauze about the wool led to the mere folding of the gauze and leaving out the wool

Many who were not close enough to his personality to see more will remember the erect, handsome, immaculate, cool surgeon demonstrating in the amphitheatre He gave the impression of controlled force and one felt there was a reserve of energy which he could use but would never need His aim was to be excellent in everything he did, in writing in diagnosis, in operating or in sport, but he did not care to compete in excellence Perhaps this was lack of ambition but I cherish his example He did not over-reach in anything He seemed to know his limitations in action or in thought, and what he attempted was always possible Thus he operated with little apparent effort for the possibilities to be achieved had been thought out beforehand

I think he personified equanimity as well as any man I ever knew To surpass others—at least to receive recognition for outdoing others—was not consistent with his plan of life He did not wish to become a famous operator for he saw that this meant incessant operating delegating undue responsibility to assistants the risks of hurry and of lack of care A single private operation was to him a day's work with every detail thought out beforehand and every step executed with nicety Yet he rarely took much time for the operation itself He held that no operation should require more than one hour He would not have been himself had he become an operator pure and simple Yet he was as neat and clean and quietly dexterous as any operator I have ever seen Those who were his assistants had, at least, the opportunity to learn the perfect care of a private patient His sense of responsibility to anyone whose care he had undertaken was very strong and he left no stone unturned to insure success He could not half-do a case in a hurry to meet another engagement Great operators must often do this to attain their greatness, and the best surgery is not always done by great operators

Dr Elliot was not a remarkable student he was well read in surgery and kept abreast of the advance of knowledge, but he was never actually recognized by the profession at large as a profound student His was not a single track mind, capable of following a protracted investigation in any one field Neither was he of the extraordinary calibre of mind which makes a few great men capable of conducting their practices super satisfactorily and yet have time to conduct researches or ride hobbies He recognized this and was content with excellence in

what he wrote or said or did That he might have become "great" but preferred to be a broadminded councillor and friend to a relatively small number of patients, is the only criticism I have ever heard of him worth mentioning To my mind one of the best things to learn from Elliot's example is that friends and family are not to be sacrificed to personal ambition

It has interested me recently to read over all of his writings from a critical point of view in order to see whether the conclusions he came to have stood the test of time All of his papers are concise and clear and give the impression of unusual ability to select important essentials and to avoid the temptations of interesting vistas of unproved hypotheses Their very brevity is a mark of much work and thought for in each are compressed all the important facts His papers cover the whole field of surgery, the realms which are now gynecological, genito-urinary, abdominal, neurological traumatic He studied a few of his own cases in each field carefully, briefly summarized the opinions in literature which he respected, drew the conclusions which he considered important for every surgeon to know, added helpful suggestions from his own experiences and illustrated them by reports of their use in successful cases Thus each paper is a brief, clearcut study of the status of the surgery of each field at that date And the wonderful part is that each and everyone of his papers is sound today from 25 to 40 years later although each subject on which he wrote was at that date only a few years old and still in the experimental stage One might pass a medical student in surgery if he knew thoroughly these 20 odd brief papers

Even now for those of us who were his assistants 30 years ago when the practice of surgical antisepsis and asepsis were fully developed, it is hard to realize that Dr Elliot's first surgery was in pre-antiseptic days when surgeons did their daily operating in the same frock coat unsterilized and even infrequently cleansed In those days ligatures were carried in the button-hole and the same sea sponges were used repeatedly without sterilization By reviewing the records of the Massachusetts General Hospital of the years 1877 and 1878 when he was a "house pupil", as the assistants of those days were officially called I have gleaned a fair idea of the example which was set in antisepsis Through the enthusiasm of Dr J C Warren, who had returned from his studies in Europe, Lister's spray was being intermittently tried out by Dr Warren Dr Beach and a few others Evidently several of the surgeons did not bother with it and Dr Warren was working against odds The technique was merely the use of the spray during operations and the first dressings, the instruments were not boiled, the field of operation prepared, the hands cleansed or the garments changed although some surgeons were



beginning to carbolize their instruments and hands as well as the field of operation. My reading of the post operative records shows that healing by first intention was the exception. The results were not striking. Dr. Warren in this, as in many instances within my own memory, bore the burden of introducing a valuable idea into the hospital in the early stages of its development, when criticism and friendly ridicule were his only rewards. The Library of the hospital has a reprint of a later article by Dr. Warren which gives a most interesting account of his experience with the introduction of Lister's ideas (*Boston Transcript*, March 13th, 1912).

After graduating from the hospital Dr. Elliot went abroad to study and it appears from a letter to the *Boston Medical and Surgical Journal* which he sent from Volkmann's clinic at Halle (December 19th, 1878) that his chief interest was in the antiseptic methods. "These details concerning the dressings seem to us especially interesting, because we find Prof. Volkmann operating in a dirty old hospital, so small that many important cases are from necessity treated as out-patients, personally never even directing a dressing, and rarely going into a ward, yet having most remarkably good results. First intention seems to be the rule, and not the exception." On this journey he visited also Weimar, Vienna, Dresden, Berlin, Paris and London and attended the clinics. Evidently he discerned the coming importance of the aseptic technique and the necessity of completeness in the exclusion of germs not only from the air as by the Lister Spray, as he had seen it used in his interne days, but also the more important facts that the field of operation, the instruments, draperies and hands of the operator must also be free from germs. Of course carbolic acid saturated the surgeon and the patient, and an occasional clean wound was found, due to the efficiency of this still most reliable antiseptic. On the other hand, varying degrees of carbolic poisoning constantly occurred if the raw surface of a wound was at all extensive. Reading the hospital records of that time one constantly finds the darkness of the urine mentioned and in some cases it is pretty clear that death followed the carbolic rather than the operation. Prominent surgeons still opposed the new ideas. Tait in January, 1885, (*New York Medical Record*) five years after Dr. Elliot returned from abroad, said "Listerism had no influence one way or the other" on his mortality in ovariectomy, which was only about 8%, and he showed comparative statistics of cases in which he had, and had not, used it. Today we pay little or no attention to spraying the air. The prevailing ideas of this time were probably well represented by the following quotation from a lecture by Prof. H. J. Bigelow printed in the *Boston Medical and Surgical Journal*, June 5th, 1879. It is also an interesting example of the fluent style of that famous teacher. "I have learned that

whatever be his method, the duty of the surgeon is to act as if the particles made visible by a sunbeam, were noxious, falling like snowflakes during every operation and every dressing, seeking to insinuate themselves into the wound at every crevice." At that time the idea of germs or bacteria was only a vague conception to scientific men in general. It is quite likely that some of Elliot's professors in the medical school could not have explained the ordinary phenomena of putrefaction, for although Pasteur had done this in 1857 and Lister had applied similar ideas to wound infection in 1867, another decade had to be consumed in demonstration, confirmation, diffusion and education.

Clearly Dr. Elliot did appreciate the coming change and his trip to Europe was at just the right time to obtain the first teaching in the new field of bacteriology. On returning he wrote a paper published in the *Boston Medical and Surgical Journal* for October 7th, 1880, on "Antiseptics in Gynecology", which is in fact a review of what he had gleaned in Europe at the laboratories on the continent where he had sought out and studied under the men who were using the newly-discovered bacteriology. In the year 1879 they had just begun to search for microorganisms. The staphylococcus had not yet been identified. There was still doubt as to whether micrococci were the cause or result of suppuration. The tubercle bacillus was unknown and in fact few separate strains of organisms were known. They were merely classified as bacilli, cocci, etc. (Ogston, *British Medical Journal*, 1881). If one remembers this and reads Elliot's article and considers the contemporary knowledge as compared with the slight changes which surgical technique has undergone since his paper was written, one must pay a tribute to the clarity of his foresight. The practical parts of his paper stand today.

Thus he returned to Boston knowing what there was to be known about germs and why complete precautions were necessary. This understanding of the theory made him carry out the ritual more intelligently. He soon gave up the spray in consequence. He appreciated sepsis rather than antiseptics and I believe he was one of the first surgeons to do so in this community and to teach it by example to most of his seniors and colleagues. His natural almost finicky desire for neatness and tidiness made him exacting in this technique and in our day he was scrupulously careful not to have his fingers come in contact with pus, holding that even the best of antiseptics would not be sure of removing every trace from the folds of the skin. He assigned one house officer to do all pus dressings and would not allow this man to assist at clean operations. Rubber gloves had not come into general use then, and did not for some time, although in the above mentioned paper in 1880 Dr. Elliot had said "The operator, himself, should inspect the hands of his assistants,

or require them to wear rubber gloves" He may have seen them used in Europe Dr Elliot for some years used cotton gloves before rubber gloves were manufactured Cotton gloves even when wet were far from an assistance in demonstrating dexterity but what he was after was cleanliness which he knew was usually more important than dexterity Now we have all come to recognize this principle and a modern rubber glove fortunately does not interfere with our exhibitions of skill It required conviction for a surgeon to use clumsy cotton gloves The practical ingenuity to find application of sound convictions was very characteristic The students who worked under him and read this will certainly feel a sense of gratitude that he insisted that they learn to the utmost detail the technique of keeping clean surgically without the practice of which dexterity is a minor factor in success

This paper on antiseptics was read before the Suffolk District Medical Society within a few months after Dr Elliot's return from Europe and must have made a good impression on his seniors and have given him an exceptionally good start in practice He was at once in demand as an assistant and for two years helped Dr John Homans in his private work

The following quotations are from Elliot's article in 1880 Nothing of what I quote is original but it is illustrative of his capacity of foresight It is hard to put one's self back in the frame of mind of the older men of that generation who listened to this paper many of whom took no action in regard to it for several years

"The best antiseptic surgeons can open a knee joint or the peritoneal cavity with almost absolute certainty that no trouble will follow and yet it is not uncommon for practitioners of today to lose patients from septicaemia or pyaemia following the simple operation to close a ruptured perinaeum or a lacerated cervix uteri or even a normal confinement This striking contrast of results points out to us a path which seems worthy of investigation" He then describes in detail the strict regulations in force at the Winckel's (Obstetric) Hospital in Dresden, where no one is allowed to examine a patient without first scrubbing the hands with soap and a nail brush followed by disinfecting with carbolic acid He sums up as follows "The weight of microscopical and clinical testimony goes to show that puerperal fever and diseases caused by absorption of putrid poisons are one and the same The finger of the examiner and his instruments are the carriers of the disease in the great majority of cases and in cleanliness and antiseptics we possess both prophylactic and curative means"

At this time Dr W H Baker was the prominent Gynecologist of Boston and had already built up a considerable clinic at the Free Hospital for Women which he had founded in 1875

Dr Elliot became Dr Baker's assistant and worked in this clinic in 1880 and 1881, and in 1882 he was appointed Assistant Surgeon At the same time he was working in the Boston Dispensary where he taught gynecology to the Harvard Medical students and after two years was appointed Visiting Physician a title which might have been Gynecologist, for his work was directing a very large female clinic These two appointments gave him about the best gynecologic experience to be obtained in the city That the work was hard although the experience great is shown by his first original paper on "Retroversion" published on February 28th 1884 In this paper he says "Out of 1500 gynecological patients who have come under my observation and treatment within the last three years there have been 89 cases of retroversion with adhesions about six per cent" Such an experience in the first three years of practice meant industry as well as opportunity The paper itself is well worth study today and his method of treatment would still be the best for the few cases in which operation is contra-indicated However both the modern woman and the modern surgeon would infinitely prefer a laparotomy The introductory paragraph is as follows

"This malady has been and is still considered by many incurable In my own experience I have found these cases curable I therefore venture to describe a method by which favorable results may be obtained" He then credits other writers who had used similar plans and gives the details of his own technique In 89 cases of adherent retroverted uteri he obtained a practical cure of 67 He says nothing in this paper about the intra-abdominal treatment of this condition, nor had it yet been advocated by others Dr W M Polk first reported four cases in 1887 At this time Dr Elliot had been doing it, for he says "When it is desirable to inspect or remove the ovaries or tubes by laparotomy (as will often happen in these cases, because diseases of the tubes so often cause retroversion with adhesions) the adhesions should be broken up and the uterus raised and stitched to the abdominal wall" I find in a case report that he had done a plastic operation on the broad ligaments to correct retroversion as early as April 24th, 1885 (*Boston Medical and Surgical Journal*, April 15th, 1886) This is perhaps not the first recorded case but is certainly among the first where the surgeon suspended the uterus in any way It shows the influence of Dr Elliot's intensive study of retroversion in his first three years He appreciated that these women suffered and as in all his other 'near priority' work was using his brains to consider how to relieve each particular patient If he succeeded and if he thought it might become of general use to others he mentioned his expedient

The only long articles he ever wrote (15 pages

each) were two. One was for the 1888 volume "Reference Handbook of Medical Sciences" on "Uterine Displacements." This paper and the one to which I allude later were entirely different in form from any of his other writings, for they were evidently written to cover a certain number of pages on assigned subjects on which he was recognized as an authority. I would defy anyone now after thirty years to write better articles or to give more real information to the average reader on these subjects. They display a wide knowledge of previous literature and a wise selection of points worth setting down in print as tested by his own personal experience. Of the first paper I would almost say that it contains all that is worth knowing about Gynecology in that era, stripped of the petty humbugs which characterized that specialty in the eighties and nineties. Elliot wrote it after ten years of gynecology with the enlightenment obtained by five years of intensive interest in laparotomy. His experience of countless pelvic examinations without laparotomy in his first years made him extremely careful and expert in this form of examination and competent to interpret the abdominal findings in his laparotomies. This paper, written at just this epoch, qualified him to select only the demonstrable truths of his former specialty. A surgeon today should know what is in that paper and need know little else about the subject, for the experience of 30 years of the whole profession has added little. Bimanual pelvic examination seems to be a lost art to the present generation which looks into the abdomen so readily. Just as the X-ray has taken the place of palpation in fractures, laparotomy has displaced the art of vaginal examination. I vividly recall Elliot's uncanny ability to prophesy in detail what we would find in the pelvis. In cases in which several tumors were found and he was uncertain which was the fundus of the uterus he first suggested the expedient of giving ergot to harden the uterus. (*Boston Medical and Surgical Journal* January 29, 1885)

The other long article is to be found in the *International Text Book of Surgery*, edited by Dr J C Warren and Dr A Pearce Gould in 1900, an excellent book in its day. Should any student wish to know the essentials of "The Surgery of the Liver, Gallbladder, Biliary Passages and Pancreas", I could recommend him nothing better to read than Dr Elliot's chapter on this subject. Even without the added knowledge which has come to us since that time from the X-ray, the duodenal tube and Graham's dye, the practical surgeon who had at his command what Dr Elliot wrote in this chapter would be on safe ground. There is nothing which has been left out and every sentence is important. It is a fine example of this kind of writing which is one of the most difficult forms, necessitating as it does the ability to abstract and at the same time to proportionate

That Dr Elliot was a leader in this branch of surgery is shown by the following quotation from Sir Berkeley Moynihan's book on *scription in direct quotation from him "Gallstones"*. On page 350 he gives a full description concerning the method of placing a patient on the operating table with a sandbag under the back with the head of the table elevated, he said "It is to Wheelock Elliot of Boston that we are indebted for the first demonstration of the great advantage to be derived from placing a patient in this position." "This position of the patient is as a fact indispensable for easy work upon the ducts." On page 301 he quotes in extenso Dr Elliot's description of the removal of a stone from the hepatic duct and states that this was among the first few instances. It was the third case. Kochler, in 1889, had removed one but the patient died. Dr Elliot's friend, Arthur Cabot, had removed one successfully in 1892.

Dr Elliot was among the first in this country to do aseptic laparotomy. Of course this was mainly because he began practice at just the right time, but it is to his credit that he grasped the opportunity. To determine when laparotomy first became an established branch of surgery is no easy matter for there are records of herniotomy, caesarian section, incision of large cysts and abscesses dotted throughout medical history for centuries. Laparotomy or abdominal surgery as such may be regarded as beginning with the removal of ovarian tumors by Sir Spencer Wells (1850 to 1860), Lawson Tait and their contemporaries just prior to the antiseptic era, although McDowell the pioneer operated in 1809. The number was rapidly increased as Listerism spread. Lister had convinced many surgeons of the value of antiseptic precautions by 1870, but the surgical world as a whole had not adopted them even in the early eighties.

That laparotomy was not done to any extent in America at this time is shown by a review of the *Transactions of the American Surgical Association from its formation in 1880* through a ten year period. From 1880 to 1883 inclusive there was but one paper read on laparotomy and this was merely an experimental study on ligating the ovarian pedicle in animals. In 1884 Dr S W Gross reviewed the subject of intestinal resection, his father having collected from literature 67 cases with 23 recoveries. These were mainly haphazard emergency operations for strangulated hernia and were not modern purposeful operations. In 1885, Dr C T Parkes of Chicago published a case of Cholecystotomy (December 19, 1884) and says "The entire number of reported operations falls within a total of 50." These for the most part consisted in incisions of tumors or abscesses which proved to contain gall bladders or gall stones. In 1886 Dr Parkes reported two more cases of Cholecystotomy, and Dr Christopher Johnson of Baltimore discussed the propriety of

"Diagnostic exploratory laparotomy" In 1887, the propriety of laparotomy for gunshot wounds was discussed. In 1888, Bull of New York read a paper on "The Surgical Treatment of Typhlitis and Perityphlitis." In this paper Dr R H Fitz's work giving "appendicitis" its name in June 1886 is first surgically recognized although rather half heartedly, because Bull evidently believed the majority of abscesses in the iliac fossa to be typhlitis. He recommends draining these abscesses and says "The propriety of exploring or removing the appendix must still remain subjudice." However he reports a case in which he did appendectomy.

As these were the *only* papers even relating to laparotomy and as Dr Elliot had been doing laparotomies since January 1884 and had done appendectomy before Bull's paper was published in 1888 we can see that he was certainly abreast if not ahead of the times. He published in the *Boston Medical and Surgical Journal*, January 29, 1885, five successful consecutive ovariectomies four of which united by first intention. He had done fifteen with only one death (ovarian sarcoma) by the end of that year.

Up to this date there had been but eleven abdominal operations, mostly ovariectomies, done at the Massachusetts General Hospital of which eight had resulted in death, and of the three recoveries Dr Arthur Cabot had recently done one and his father Dr Samuel Cabot, in 1874 and 1877, had done two. (Information obtained from the Librarian Mrs Grace W Myers.) Dr Elliot could have seen no successful laparotomies as a house pupil, as I have ascertained by inspecting the records made in his term of service, August 1st, 1877, to Aug 1st, 1878. Of course the American Surgical Association and the Massachusetts General Hospital were conservative institutions, but it is clear that Dr Elliot at 33 was a very successful surgeon of good judgment since he attempted and achieved good results and no bad ones in an operation at which the older generation were frowning and which was not being successfully done by the most prominent local surgeons or even discussed at the great national surgical meetings.

These statements do not tell the whole story, however, for while Dr Elliot might have been discouraged by the attitude of the general surgeons at this period he had several encouraging examples from the Gynecologists. A review of the Transactions of the American Gynecological Association from 1880 to 1885 presents a different picture. There were a number of reports of ovariectomies and of a few hysterectomies.

There was also one surgeon here in Boston who had done a few abdominal operations. Dr John Homans in 1887 published a monograph on 384 abdominal operations with a mortality of only 10%. Dr Elliot had taken part in

some of these operations for he had assisted Dr Homans in 1881 and 1882. Dr Homans had been a follower of Sir Spencer Wells. By sheer character he forced the recognition in this vicinity of ovariectomy as a practical curative operation. He took up "Lasterism" in 1877 and his first case to recover was operated upon February 27 of that year at the Carney Hospital. At the time Dr Elliot began to help him he had done only nineteen of which the first five had died. All of these five were done before Spencer Wells' book was published which renewed his courage to do this operation. Dr Homans taught much to Dr Elliot but undoubtedly Dr Elliot did much for Dr Homans in showing him the technique of asepsis, for Dr Homans' experience had been received chiefly in the Civil War before antiseptics were used.

Evidently Dr Elliot had intended to practice Gynecology up to the time of his appointment at the Massachusetts General Hospital in 1886. Reading between the lines it is pretty clear to me that his appointment at this hospital was coincident with, if not the cause of, the passing of laparotomy from Gynecology to General Surgery in this community. It is not unlikely that in other cities at this time the best trained young abdominal surgeons were Gynecologists and as in his case were sought to fill the vacant places on the surgical staffs. Dr H A Kelly on the other hand kept laparotomy for Gynecology in Baltimore.

Although in practice only 2 years, Dr Elliot in 1882 started a small private hospital of his own. Evidently he was bound to have a place where he could open the abdomen under what he considered favorable conditions. Dr W H Baker dominated the Free Hospital for Women, and the conservatism at the Massachusetts General Hospital seemed hopeless. Dr Homans practically monopolized St Margaret's Hospital. Dr Elliot wanted to try out his own technique and apparently thought his best chance was to forge ahead by himself. It is not unlikely that this bold proceeding made his recognition and appointment on the out-patient staff of the Massachusetts General Hospital almost a necessity, for popular opinion would demand for him a place on the staff of Boston's famous hospital as it had done in the case of Dr Homans (1882), although the latter had been shorn of his opportunity to do ovariectomy by the following vote of the trustees: "Provided also he understands and desires to comply with the restrictive policy of the hospital in relation to the practice thereof of specialties particularly the specialty of ovariectomy." It was clear that gynecology had come to stay and would absorb abdominal surgery unless general surgery absorbed it. Dr Cabot and Dr Richardson, who were already on the staff, no doubt brought it about that their promising friend should bring his knowledge of gynecology to the Massachusetts General Hospital which then as now would not rec-

each) were two. One was for the 1888 volume "Reference Handbook of Medical Sciences" on "Uterine Displacements." This paper and the one to which I allude later were entirely different in form from any of his other writings, for they were evidently written to cover a certain number of pages on assigned subjects on which he was recognized as an authority. I would defy anyone now after thirty years to write better articles or to give more real information to the average reader on these subjects. They display a wide knowledge of previous literature and a wise selection of points worth setting down in print as tested by his own personal experience. Of the first paper I would almost say that it contains all that is worth knowing about Gynecology in that era, stripped of the petty humbugs which characterized that specialty in the eighties and nineties. Elliot wrote it after ten years of gynecology with the enlightenment obtained by five years of intensive interest in laparotomy. His experience of countless pelvic examinations without laparotomy in his first years made him extremely careful and expert in this form of examination and competent to interpret the abdominal findings in his laparotomies. This paper, written at just this epoch qualified him to select only the demonstrable truths of his former specialty. A surgeon today should know what is in that paper and need know little else about the subject, for the experience of 30 years of the whole profession has added little. Bimanual pelvic examination seems to be a lost art to the present generation which looks into the abdomen so readily. Just as the X-ray has taken the place of palpation in fractures, laparotomy has displaced the art of vaginal examination. I vividly recall Elliot's uncanny ability to prophesy in detail what we would find in the pelvis. In cases in which several tumors were found and he was uncertain which was the fundus of the uterus he first suggested the expedient of giving ergot to harden the uterus. (*Boston Medical and Surgical Journal* January 29, 1885)

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Dr. Elliot was among the first in this country to do aseptic laparotomy. Of course this was mainly because he began practice at just the right time, but it is to his credit that he grasped the opportunity. To determine when laparotomy first became an established branch of surgery is no easy matter for there are records of herniotomy, caesarian section, incision of large cysts and abscesses dotted throughout medical history for centuries. Laparotomy or abdominal surgery as such may be regarded as beginning with the removal of ovarian tumors by Sir Spencer Wells (1850 to 1860), Lawson Tait and their contemporaries just prior to the antiseptic era, although McDowell the pioneer operated in 1809. The number was rapidly increased as Listerism spread. Lister had convinced many surgeons of the value of antiseptic precautions by 1870, but the surgical world as a whole had not adopted them even in the early eighties.

That laparotomy was not done to any extent in America at this time is shown by a review of the Transactions of the American Surgical Association from its formation in 1880 through a ten year period. From 1880 to 1883 inclusive there was but one paper read on laparotomy and this was merely an experimental study on ligating the ovarian pedicle in animals. In 1884 Dr. S. W. Gross reviewed the subject of intestinal resection, his father having collected from literature 67 cases with 23 recoveries. These were mainly haphazard emergency operations for strangulated hernia and were not modern purposeful operations. In 1885, Dr. C. T. Parkes of Chicago published a case of Cholecystotomy (December 19, 1884) and says "The entire number of reported operations falls within a total of 50." These for the most part consisted in incisions of tumors or abscesses which proved to contain gall bladders or gall stones. In 1886 Dr. Parkes reported two more cases of Cholecystotomy, and Dr. Christopher Johnson of Baltimore discussed the propriety of

"Diagnostical exploratory laparotomy" In 1887, the propriety of laparotomy for gunshot wounds was discussed. In 1888, Bull of New York read a paper on "The Surgical Treatment of Typhlitis and Perityphlitis." In this paper Dr R H Fitz's work giving "appendicitis" its name in June 1886 is first surgically recognized although rather half heartedly because Bull evidently believed the majority of abscesses in the iliac fossa to be typhlitis. He recommends draining these abscesses and says "The propriety of exploring or removing the appendix must still remain subjudice." However he reports a case in which he did appendectomy.

As these were the *only* papers even relating to laparotomy and as Dr Elliot had been doing laparotomies since January 1884 and had done appendectomy before Bull's paper was published in 1888, we can see that he was certainly abreast if not ahead of the times. He published in the *Boston Medical and Surgical Journal*, January 29, 1885, five successful consecutive ovariectomies four of which united by first intention. He had done fifteen with only one death (ovarian sarcoma) by the end of that year.

Up to this date there had been but eleven abdominal operations, mostly ovariectomies done at the Massachusetts General Hospital of which eight had resulted in death, and of the three recoveries Dr Arthur Cabot had recently done one and his father Dr Samuel Cabot, in 1874 and 1877, had done two. (Information obtained from the Librarian Mrs Grace W Myers.) Dr Elliot could have seen no successful laparotomies as a house pupil, as I have ascertained by inspecting the records made in his term of service, August 1st, 1877, to Aug 1st, 1878. Of course the American Surgical Association and the Massachusetts General Hospital were conservative institutions, but it is clear that Dr Elliot at 33 was a very successful surgeon of good judgment since he attempted and achieved good results and no bad ones in an operation at which the older generation were frowning and which was not being successfully done by the most prominent local surgeons or even discussed at the great national surgical meetings.

These statements do not tell the whole story, however, for while Dr Elliot might have been discouraged by the attitude of the general surgeons at this period he had several encouraging examples from the Gynecologists. A review of the Transactions of the American Gynecological Association from 1880 to 1885 presents a different picture. There were a number of reports of ovariectomies and of a few hysterectomies.

-There was also one surgeon here in Boston who had done a few abdominal operations. Dr John Homans in 1887 published a monograph on 384 abdominal operations with a mortality of only 10%. Dr Elliot had taken part in

some of these operations for he had assisted Dr Homans in 1881 and 1882. Dr Homans had been a follower of Sir Spencer Wells. By sheer character he forced the recognition in this vicinity of ovariectomy as a practical curative operation. He took up "Lusterism" in 1877 and his first case to recover was operated upon February 27 of that year at the Carver Hospital. At the time Dr Elliot began to help him he had done only nineteen, of which the first five had died. All of these five were done before Spencer Wells' book was published which renewed his courage to do this operation. Dr Homans taught much to Dr Elliot but undoubtedly Dr Elliot did much for Dr Homans in showing him the technique of asepsis, for Dr Homans' experience had been received chiefly in the Civil War before antiseptics were used.

Evidently Dr Elliot had intended to practice Gynecology up to the time of his appointment at the Massachusetts General Hospital in 1886. Reading between the lines it is pretty clear to me that his appointment at this hospital was coincident with, if not the cause of, the passing of laparotomy from Gynecology to General Surgery in this community. It is not unlikely that in other cities at this time the best trained young abdominal surgeons were Gynecologists and as in his case were sought to fill the vacant places on the surgical staffs. Dr H A Kelly on the other hand kept laparotomy for Gynecology in Baltimore.

Although in practice only 2 years, Dr Elliot in 1882 started a small private hospital of his own. Evidently he was bound to have a place where he could open the abdomen under what he considered favorable conditions. Dr W H Baker dominated the Free Hospital for Women, and the conservatism at the Massachusetts General Hospital seemed hopeless. Dr Homans practically monopolized St Margaret's Hospital. Dr Elliot wanted to try out his own technique and apparently thought his best chance was to forge ahead by himself. It is not unlikely that this bold proceeding made his recognition and appointment on the out-patient staff of the Massachusetts General Hospital almost a necessity, for popular opinion would demand for him a place on the staff of Boston's famous hospital as it had done in the case of Dr Homans (1882), although the latter had been shorn of his opportunity to do ovariectomy by the following vote of the trustees: "Provided also he understands and desires to comply with the restrictive policy of the hospital in relation to the practice there of specialties, particularly the specialty of ovariectomy." It was clear that gynecology had come to stay and would absorb abdominal surgery unless general surgery absorbed it. Dr Cabot and Dr Richardson, who were already on the staff, no doubt brought it about that their promising friend should bring his knowledge of gynecology to the Massachusetts General Hospital which then as now would not rec-

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I think it is not usually realized that the male abdomen had rarely been opened until the surgery of the appendix began in the late eighties. Fully a year after Dr Fitz read his famous paper on June 17th, 1886, Fitz gave the name "appendicitis" to the varied conditions previously called typhilitis, typhloenteritis, perityphlitic, paratyphlitic, abscess of the appendix vermiformis caeci (Willard Parker), appendiceal peritonitis (With). He first thoroughly analyzed the whole problem of abscesses in the right iliac fossa and showed that disease of the appendix and not an inflammation of the caecum (typhilitis) was usually the cause of these abscesses. He pointed out that removal of the inflamed appendix would prevent the extension of the inflammation to the caecum and peritoneum in its vicinity. Nevertheless it took a long time for surgeons to appreciate and act on this reasoning for it was taboo to incise the peritoneal cavity in the presence of pus. One must read the literature of the times to appreciate the dread which surgeons then felt of contaminating the peritoneal cavity. They had opened the female abdomen for pelvic tumors and they incised a few "perityphlitic" abscesses which had become fluctuant, using great caution to avoid opening the free peritoneum, but not one had advocated crossing the peritoneal cavity to get the appendix or even to open an abscess.

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In the late afternoon of November 3, 1887, Dr Elliot was called in consultation by Dr E. R. Cutler and Dr H. A. Wood, of Waltham, to see a man, who had been sick for five days, with reference to the question of operation in a case of possible appendicitis. The patient was in a serious condition, with severe abdominal symptoms and a temperature of 101.5°. There was no cake to be felt. On account of the lateness of the hour it was decided to wait until the next morning. Dr R. H. Fitz and Dr M. H. Richardson were added to the consultation at that time. The diagnosis of appendicitis was confirmed and the prognosis considered unfavorable. As the pulse and temperature were both distinctly lower, it was decided to delay the operation. The following day, November 5, the condition was evidently much more serious and the same consultants decided that immediate operation was imperative. Dr Elliot operated with the assistance of Dr Richardson and Dr Cutler. The incision was made in the right iliac fossa. The peritoneum was cut through. No pus was to be seen. The intestines were somewhat matted together. On separating these adhesions a large pocket of fetid pus was discovered. The cavity was cleansed and drained. No further attempt was made to find the appendix. After a stormy convalescence, the patient recovered completely in about a month and since then has had no further trouble.

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I think it is not usually realized that the male abdomen had rarely been opened until the surgery of the appendix began in the late eighties, fully a year after Dr Fitz read his famous paper on June 17th, 1886. Fitz gave the name "appendicitis" to the varied conditions previously called typhlitis, typhloenteritis, perityphlitis, paratyphlitis, abscess of the appendix vermiformis caeci (Willard Parker), appendiceal peritonitis (With). He first thoroughly analyzed the whole problem of abscesses in the right iliac fossa and showed that disease of the appendix and not an inflammation of the caecum (typhlitis) was usually the cause of these abscesses. He pointed out that removal of the inflamed appendix would prevent the extension of the inflammation to the caecum and peritoneum in its vicinity. Nevertheless it took a long time for surgeons to appreciate and act on this reasoning for it was taboo to incise the peritoneal cavity in the presence of pus. One must read the literature of the times to appreciate the dread which surgeons then felt of contaminating the peritoneal cavity. They had opened the female abdomen for pelvic tumors and they incised a few "perityphlitic" abscesses which had become fluctuant, using great caution to avoid opening the free peritoneum, but not one had advocated crossing the peritoneal cavity to get the appendix or even to open an abscess.

Howard Kelly in his exhaustive book on ap

gerv passed the experimental stage but the same spirit which prevented Homans from doing laparotomies at the Hospital persisted, and Elliot could only do his share during his four months of service. Even in 1905 when I had occasion to review the brain cases which had been operated on at the hospital and had intensively studied the records of every case, the same spirit prevailed. The staff still continued to perform their individual experiments and would not permit one of their number to have all the material in return for the necessary study involved in perfecting himself in the neurology and special technique. As 63 cases in ten years had to be divided among some 18 surgeons progress was of course not made. Meantime Johns Hopkins had appreciated Cushing's enthusiasm and had offered him full opportunity. It was not many years before Cushing's genius for detail made Horsley's prophetic ideas of practical importance to the patient with a brain tumor. So Elliot wrote nothing on this subject except one excellent paper on traumatic cranial surgery but he did act as a successful local pioneer and in my opinion interested Cushing in his life work.

Dr Elliot accomplished most of his work while he was still Out-Patient Surgeon before he was forty-two when he received his appointment to the staff of the hospital. He resigned at the age of fifty-four, which was a misfortune, for he was in the prime of life, and his foresight judgment and straightforward honesty, together with his great ability, would have been of inestimable benefit to the hospital. However, his energy and judgment were not wasted, for the Society for Prevention of Tuberculosis and the New England Surgical Dressings Committee during the great war had the benefit of it, as well as various business interests of which he was on the directing boards.

In writing this sketch of Dr Elliot's work I have not lost sight of the fact that he was born and lived at just the right time to take part in the development of modern surgery. The work of Pasteur, Lister and of Morton made it possible for the young man of his generation to do as he did, and there were other contemporaries in the other large American cities who, with the same advantages made step by step the same progress along the same lines. Dr Elliot was no genius, merely an honest intelligent young man with normal mind, physique and aspirations. The group of colleagues with whom he worked at the hospital helped form his opinions and his character. To have worked with Porter, Homans, Warren, Arthur Cabot, Richardson, Harrington and Mixer was in itself a strong stimulus. These other young men had also profited by the sound teaching of Dr H. J. Bigelow and Dr Samuel Cabot in the principles of the old surgery which was giving way to the new solely in the possibilities developed from the germ theory of infection, thus enabling them

to reason out the proper steps to exclude germs from wounds. Their knowledge of the behavior and treatment of septic wounds would be impossible for this generation to acquire. To have made a choice for leadership among the men of this unusually able group would have been most difficult.

All of these men showed us a fine spirit of service and to each we are indebted for something of what we are. In contrasting their service with that given by Elliot to the community and to the world I am far from asserting relative values. In some degree each was an originator or a promoter of some new surgical idea as in some degree they were all demonstrators and teachers of known surgical truths. While Elliot had independent judgment he was willing to adopt anything which he considered of value in the work of others, I wish to express my feeling that he used his mind so well that he was always a little in advance of those about him and seldom needed their help.

It is perhaps a matter of personal taste that service such as Elliot's appeals to me. I contend that from the time he was a medical student he quietly, modestly and yet firmly showed a better way to his teachers, to his colleagues and to his assistants. They followed him without knowing that they were being led. He was an instinctive pilot who could carry the ship up an unknown channel because of his clear vision and judicious combination of boldness and caution. He was no foolhardy adventurer with bits of geography named after him as the first discoverer but one who carefully examined the evidence for the existence of new bays or islands in case he might need to pilot someone to them. I feel sure that the surgeons who did the first operations for appendicitis or gallstones studied the possibilities of the local landmarks, the alternatives of approach and the means of preventing infection more thoroughly than modern surgeons. I believe those early patients were almost as safe in their hands even then, as they would be now in the hands of modern pilots who follow charted tracks into the harbors. The names of the early skippers who used the best channels and who knew every ripple and tide will be forgotten, just as those of the surgeons who did the first operations which we still use. Many operations which we do as routine today were done by them successfully when few or none had been done in this community.

Much that we have learned since had to be reached by trial and error. The remarkable thing is that as a pioneer Dr Elliot seemed to sense the right way and avoid mistakes. His mind cut as directly through frills and unessential details as his knife through unimportant anatomic structures to the tissue he sought to repair or remove. He was not a teacher of detailed anatomy but he knew well the essential anatomic landmarks. He held that the way to dissect, especially for malignant conditions, was

occasionally involves unnecessary contamination of the peritoneum with foul pus. Now if by exploratory laparotomy an abscess is found which could best be drained extraperitoneally, this can still be done, and has been done under such circumstances. If the abscess is so situated that it cannot be drained without contaminating the peritoneum, then laparotomy is necessary. I think also that the danger of contaminating the peritoneum with pus has been greatly exaggerated." This whole discussion is worth reading, but Elliot's part rings like a bell. (*Boston Medical and Surgical Journal* Jan 26, 1888.)

Many other illustrations might be given of Elliot's ability to discern in their early stages ideas which were destined to take part in the progress of surgery. He followed Kelly's lead and did the fourth recorded case of nephroureterectomy. He was second only to Hegar in demonstrating the value of surgery in tuberculous peritonitis. His paper on extrauterine pregnancy in which he first called attention to waiting until the shock had subsided is a classic. He has priority and is always quoted in resection of the intestine for mesenteric thrombosis. He was among the first to operate for tumors of the spinal cord and in Feb 1902 he divided posterior nerve roots for the relief of pain in inoperable cancer of the vertebrae. He first trusted the X-ray and removed a ureteral stone. He did the first successful laryngectomy that I know of in this community.

Since he was so early in each field he necessarily must have found it technically unexplored. To recognize the desirability of removing the appendix or of opening the hepatic duct is one mental step, but a second must be taken in conceiving the technical way to do this successfully without injury to the patient. That he possessed this faculty is shown by his invention of gauze sponges and of the ideal position for gallstone surgery and of his ingenious and successful method of maintaining the nutrition in cases of enterectomy by collecting the chyme in one opening and injecting it into the other. In his manner of meeting technical problems simplicity and directness were so pronounced that the absence of complexity concealed the originality. You will find no descriptions of complicated apparatus long since unused in Elliot's writings, on the contrary a simple description of the essential steps of each operation as it is still done.

The converse is also true. Nothing can be found in his papers which has proved to be a personal hobby, a fashionable fad, an example of over enthusiasm, or an illustration of "meddlesome surgery." His was not an experimental temperament constantly trying new things. His primary idea was to benefit each case under his care and new ideas or methods had to convince him on that basis. I remember many of the cases that form the bases of each paper and know that his experiments were of this char-

acter, inventions to meet each particular problem for each patient. Since the experiments were successful he recorded them and they became part of surgical science.

I have alluded to his being a pioneer in brain surgery. He published nothing on this part of his work because he did not feel that he could add to what was already known. Although his interest in this field continued over ten years, few cases came under his care. He met Horsley in Europe in 1889 and although this young prophet of the practicability of brain surgery had as yet little standing in London, Elliot recognized his ability and came back to Boston keen to be his standard bearer in this country. He studied all that was then known about cerebral localization, aroused the interest of Dr J J Putnam and the other Boston neurologists, maintaining that these hopeless cases were entitled to some sort of surgical effort even if the chances were greatly against success. Horslev had then operated upon about 40 cases and Keene, the pioneer in brain surgery in this country, had reported his first three cases the year before and one of these was decidedly successful. Unfortunately Elliot was still only an out-patient surgeon and had no opportunity to operate in the hospital unless when substituting for some of his seniors. It was not until 1893 that he had his first chance at the hospital to operate on a brain tumor and thus, a cyst, was the first successful case operated on at the Massachusetts General, only one case having been trephined for tumor previously. Elliot, however, succeeded in calling attention to this branch of surgery among his associates. His intimacy with Horsley continued for many years and several times they exchanged visits. Superficially they were much alike with the same keen clear look and direct straightforward way of undertaking anything, but Elliot lacked the student qualities which Horsley possessed and had too much equanimity to be an insistent advocate of any idea. He was ready to recognize Horsley's vision but not to submerge all his energy to prove it to others as some great pupils have done for their masters. He was satisfied to admire his friend without attempting to imitate him. All he succeeded in doing was to arouse interest in this branch of surgery among his colleagues who each insisted on doing a few cases without proper study, with the result that none of them became really competent. However, this was the custom of those days.

The best that can be said of brain surgery at the Massachusetts General Hospital is that the evident lack of success may have inspired Dr Harvey Cushing who was in Elliot's service in 1894 and 1895 to make this problem his life work. Elliot's enthusiasm for Horslev was catching. He would have been glad to do all the cases of brain and spine lesions which were referred to the clinic until this branch of sur-

## VERMONT STATE MEDICAL SOCIETY

### USE AND ABUSE OF RADIUM\*

BY ERNEST M. DALAND, M.D., F.A.C.S.†

**R**ADIUM is a metal found in uranium ores in the form of radium sulphate and radium chloride. Radium itself has no therapeutic value but its value lies in the substances into which it changes. Radium gives off a gas, radium emanation or radon. This has no therapeutic value but this changes again into Radium A, then Ra B, Ra C, etc. These are the substances which do have value as these give off radiation which has a marked effect on certain tissues. There are three types of radiation—alpha, beta, and gamma. Alpha radiation will not penetrate a piece of glass or a thick piece of paper. The beta rays are stronger and pass through glass for a distance of several centimeters of air but a less distance through tissues. These are more caustic in their effect and cause necrosis of tissue. If a piece of lead or other heavy metal is placed over the tube, certain of the shorter and more caustic rays are filtered out, leaving the longer and less caustic ones. The gamma rays are much more penetrating and extend for several feet through the air. These more closely resemble the rays from a high voltage X-ray machine. They are called into use when deeper penetration of the tissues is desired or when it is desired not to injure the skin.

There are two general methods for using radium. If some of the metallic salt is placed in a tube or placed on a plaque, the decomposition products of the radium are kept within the walls of the tube or plaque and the rays pass outward. However, it has been found possible to collect the emanation or gas by putting the salt in solution and pumping the gas given off into small glass tubes. This allows the solution, which contains the costly radium, to be kept intact in a safe. This emanation is then used in the glass tubes. For the time being it is just as effective as the original radium and it can be used on patients without fear of loss, for the monetary value is very small. It is known that these tubes of emanation lose one-sixth of their strength each day. As tubes are collected daily, there is a constant amount of emanation on hand, in spite of the decay.

You have all heard of radium seeds. These are very tiny glass capsules, containing a trivial amount of emanation. These seeds are injected into growths and allowed to stay permanently. They cause necrosis of the tumor for a distance of one to two centimeters around the seed. The disadvantage in these lies in the amount of necrosis and resulting pain experienced by

their use. Recently gold and platinum have been used in place of glass. The metal screens the more caustic rays, with the result that the pain resulting is very much diminished and the effect equally good as when glass was used.

Now I wish to review some of the uses of radium. In the non-malignant class of diseases its chief use is in angiomas of the cavernous type, less satisfactorily in the port wine marks, in the treatment of keloids and skin keratoses. In some small bleeding fibroids and in uterine bleeding of undetermined cause it is fairly effective. Care must be taken that an artificial menopause is not brought on or the patient must be told that this may happen.

Application of large quantities over the spleen in myelogenous leukemia or over the glands in lymphatic leukemia and Hodgkins' disease is very effective for a time, but the enlargements reappear and are affected less each time the treatment is given. The X-ray in competent hands is probably as effective as radium in this group of cases.

In malignant diseases radium is not as certain and as quick as surgery and should not be used if surgical measures are possible. The desire in treating cancer is to destroy or remove the whole growth. Surgery cannot always do this. If radium is used it should be so used that all parts of the lesion shall receive a destructive dose. If that cannot be done the patient cannot be cured. It does no good to destroy the surface of a growth, if the base is to continue its growth in the meantime.

Radium is very effective in treating skin cancer where surgical removal would cause too much deformity as on the nose or eyelids.

It is dangerous to treat cancer of the lip with radium unless some notice is taken of the glands. This is true of any metastasizing tumor. Probably twenty times a year I see people returning one to five years after treatment of cancer of the lip with radium with inoperable glandular metastases. Surgical removal of the lip lesion with the glands draining the region is the method of choice.

In the treatment of cancer of the tongue and buccal mucosa surgery is first, surgery and radium second, and radium alone third in order of efficiency.

I can see no place for radium in cancer of the breast except for the treatment of recurrent skin nodules. In cancer of the antrum and accessory sinuses operation combined with radium is the accepted treatment.

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Read at the Vermont State Medical Meeting, Middlebury, Vt., October 13, 1922.

\*For record and address of author see "This Week's Issue" page 1013.

to locate what must not be removed and then to excise everything else in the neighborhood of the lesion. In this he was in great contrast to his colleagues Richardson and Mixter, who were teachers of anatomy and who could name every branch of every artery or nerve and whose operations were a delight to watch as they developed and located each little structure. I could never agree with Dr. Elliot on this dictum for I believe that no matter how detailed one's knowledge in any branch of medicine, there will be times when the detail will be of use. Far from making one timid such knowledge of minute anatomy gives confidence and not infrequently will enable the surgeon to recognize the neighborhood of important structures which are distorted from their normal relations by pathologic changes. However, this theory of his was something he liked to talk of, rather than one which actually led to errors, for he really knew anatomy well.

Dr. Elliot's early retirement from active practice spared him that trying period for both surgeons and their assistants when eyesight is dimming, when memory requires prompting and when the hand lags in pace and must be slowed or show a tremble. His remembrances of assisting his seniors at this stage of their careers would have haunted him had he been obliged to continue his work. His life after the close of the war and of his activities as chairman of the New England Dressings Committee, was his own. He enjoyed his family and friends and shared with his wife their continued pleasure in walking and riding about their home in Needham. He rode regularly to hounds with

the Norfolk Hunt up to 1924, the year before his death. He never lost his appearance of poise, self-control and reserved force, and his friendly smile and interested greeting at social events reflected the pleasure he had in seeing his old patients and pupils who were invariably glad to see him.

Dr. Elliot died of heart disease at his home on Sept. 17th, 1925, and Mrs. Elliot survived him less than a year. While they had their share of sorrow, they had enjoyed the beautiful things of life, always preferring the simple universally obtainable pleasures as the glory of the dawn in summer or the comfort of a glowing hearth after a walk in the winter twilight. Yet they appreciated as few people can the finer things in music, literature, art and social intercourse, which require the discipline of training and earnest study.

I have tried to show Dr. Elliot as I saw him and looking at the fine face in the accompanying picture, I like to think of future students who are coming and hope that they may know of his straightforward career and useful, happy life and not be discouraged when they find they are not supermen. They will have the same opportunity to be temperate in everything, to aim at excellence rather than superiority, to be eager to abandon old prejudices and to see and to adopt better methods to relieve their patients. They will need no superhuman qualities of mind or body if they use to their best advantage the gifts common to every normal man. Dr. Elliot's career was an example of the correct use of normal faculties rather than an exhibition of superior intellect or of excessive industry.

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of the rectum where it has good palliative value. It is usually necessary to do a primary colostomy if the maximum radiation is to be given.

It is probable that radium treatment is now the best means of handling cancer of the cervix uteri, either as curative or palliative. The early case where the cervix alone is involved and where a complete hysterectomy with dissection of the pelvic glands is possible is hard to find. It is necessary to apply the radiation in the uterine canal as well as in the cervical growth. The more favorable the case the greater the amount of radium that should be used. In late cases small amounts of radium will diminish the pain and stop the bleeding.

In cancer of the fundus supravaginal hysterectomy is the best therapy but radium offers palliation. Cancer of the prostate and bladder are occasionally helped by radium in connection with operation.

Radium is not the magic material that it was hoped it was to be when it was first discovered. Much harm has been done by its use in the wrong type of case. One of the dangers at the present time is in its use by untrained men. It is possible to obtain radium seeds or tubes by mail with directions for its use. Recently I saw a case where a physician had planted a seed in a growth at the inner canthus. Three weeks later when the reaction was very violent, he admitted to the patient he knew nothing about radium and that he had better go to a radium hospital.

It is unfortunate that radium costs so much money. Where a private supply is owned, it is necessary to charge large fees, particularly where the radium is not used twenty-four hours a day. Certain men become known as extortionists whether or not they are such. This difficulty can be overcome somewhat by the ownership of the radium by groups of men or by hospitals, with a proper check on the uses to which it is to be put and the charges to be made.

Finally I wish to sound another warning against the use of radium in tumors of the metastasizing type unless the glands are properly treated or in cases where surgical removal is possible.

### MISCELLANY

#### BENNINGTON COUNTY MEDICAL SOCIETY NOTES

The Bennington County Medical Society held its regular meeting May 23d, 1928 at the Putnam Memorial Hospital. Henry S Goodall M.D., presented a fine paper on 'Essentials of Diagnosis and Treatment in Pulmonary Tuberculosis'. Dr Goodall was formerly connected with the sanatorium at Saranac N. Y.

Dr Tobin reported an interesting case of frontal sinus disease complicated by marked dyspnoea and exophthalmus.

The society reaffirmed its determination to work for the passage of a proper medical practice act the

present act being somewhat obsolete and not in keeping with conditions as they exist today.

John Simpson Niles, M.D., aged 81 years, for many years a practitioner at Pownal, Vermont, died at his home there May 17th. He was graduated from the medical school of University of Syracuse.

JOHN D LANE, M.D., Secretary

#### DEPARTMENT OF PUBLIC HEALTH REPORT FOR MAY, 1928

The following cases of communicable diseases have been reported during the month: chickenpox 107, measles 228, mumps 79, scarlet fever 47, smallpox 1, tuberculosis 17, whooping cough 46.

At the Laboratory of Hygiene the following examinations were made:

Examinations for diphtheria bacilli	68
Widal reaction of typhoid fever	34
malarial parasites	1
tubercle bacilli	165
evidence of syphilis	306
gonococci in pus	88
of blood for contagious abortion in cattle	51
blood for white diarrhea of fowls	108
water, chemical and bacteriological	51
water, bacteriological	105
milk, market	144
milk submitted for chemical only	7
milk submitted for microscopical only	8
milk submitted by Dept. of Agriculture for added water	4
foods	27
for the courts autopsies	3
the courts miscellaneous	33
Autopsies to complete death returns	2
Miscellaneous examinations	50

Reports from the Division of Communicable Diseases are as follows:

Cases of gonorrhea reported	25
syphilis reported	57
gonorrhea reporting for treatment	0
syphilis reporting for treatment	13
intravenous treatment	13
Total treatments	36
Gonorrhea outfits distributed	192
Wassermann outfits distributed	288

The Division of Aftercare for Poliomyelitis reports 229 patients seen, 16 home visits made, 8 new pieces of apparatus fitted, 13 pieces of apparatus altered or mended and 4 plaster casts removed. Seven patients returned home from the Fenway Hospital and two from the Children's Hospital. The usual spring clinics were held in nine towns. Sales from articles made under the direction of the vocational teacher amounted \$23.40.

In the Division of Maternity and Infancy the nurse visited 10 towns at the invitation of various women's clubs, farm bureaus and Parent Teachers Association.

The Division of Tuberculosis visited all of the Teacher Training classes in the state with the ex-

ception of Montpelier and Barre and explained the methods of health education.

## DEATHS

### DR. GEORGE P COLLINS

Ferrisburg recently lost her most aged physician, Dr George P Collins in his eighty fourth year

He was for more than fifty six years a prominent physician and citizen of this section. a graduate of Middlebury College and of the Medical Department of the University of Vermont.

One brother survives him, D W Collins of Burlington.

The funeral services were held from his late home in Ferrisburg

### DR. ANTONIO F ELIE

Dr Antonio F Elie of Island Pond Vermont died after a lingering illness at the St. Vincent de Paul Hospital in Sherbrooke Quebec, on March 28th, 1928 at the age of 68 years

He was born at Labale Quebec, on May 21st 1859 His ancestors came originally from Brittany France

At the age of 22 he left Nicolet College and entered Victoria Medical College, graduating in 1886

He came to Island Pond Vermont, one month later and remained there in active practice for about 42 years

Dr Elie was in every way a perfect type of the old fashioned family doctor whose professional activities had taken him into the hearts and homes of practically everybody in the town and vicinity in which he lived and labored so long

He was a kind and genial man and was greatly esteemed by all who knew him.

He is survived by his wife two daughters Mrs A. J Paquette and Miss Marie Stella Elie and two sons Armand J and Lionel A. Elie

### DR. JOHN SIMPSON MILES

Dr John Simpson Miles died suddenly in his office at Pownal, Vermont, May 17 1928 while treating a patient.

He was born at Petersburg New York, April 17 1847 and received his medical education at the University of Syracuse New York. Fraternally he was a Mason.

### DR. ANSEL I. MILLER

Dr Ansel I. Miller 70 for more than 40 years a practising physician in Brattleboro deacon of the Centre Congregational Church and former member

of the school board died June 15 of heart and kidney trouble following pneumonia

Last March Dr Miller was taken ill in Washington. He returned to Springfield, Mass., and was ill for a time with pneumonia. He was able to return to Brattleboro the last of April

Dr Miller was born in Dummerston, October 14 1857 of Joseph and Sophia (Arms) Miller. He came of Revolutionary stock and his ancestors were among the first settlers in Dummerston.

He attended the common schools and Brattleboro Academy at West Brattleboro graduating in 1876 and then entered Williams College at Williamstown, Mass., where he graduated with the degree of Bachelor of Arts in 1881. In 1884 he graduated from the College of Physicians and Surgeons New York.

For 18 months after his graduation at the College of Physicians and Surgeons Dr Miller was interne at the City Hospital (Charity) and the Maternity Hospital New York

On December 23 1885 Dr Miller married Miss Isabel Boynton in West Stockbridge Mass., and December 30 they came to Brattleboro. Dr Miller opening an office here for the practice of his profession. He became one of the most successful and widely known physicians in this section.

He became affiliated with various medical societies, local, state and national including the Windham County Medical Association, the Connecticut River Medical Society the Vermont State Medical Society the American Medical Association, and the New York Academy of Medicine. He also belonged to the Doctors Club of Brattleboro and the Society of the Alumni of the City Hospital New York. On May 5 1914 he was elected president of the Windham County Medical Association which he previously had served as vice-president. He had been examiner for various life insurance companies

He had served on the advisory board of the Brattleboro Memorial Hospital and had been on the active staff ever since the hospital was established. He also taught in the nurses training school and as Trustee of the Austine Institution, the state school for the deaf at Brattleboro

Besides his wife Dr Miller leaves a son, Wells B Miller of Baltimore, Md., and a brother Adin F Miller town clerk of Dummerston.

Throughout his many years as a physician Dr Miller kept in touch with the progress of the science of medicine through attendance at conventions and through constant reading. He was devoted to his profession making many close personal friendships through his fine character and personality and his deep interest in his patients

**Case Records**  
of the  
**Massachusetts General Hospital**

ANTE MORTEM AND POST-MORTEM RECORDS AS USED IN  
WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY R C CABOT, M D

F M PAINTER, A.B., ASSISTANT EDITOR

CASE 14191

COMA

MEDICAL DEPARTMENT

An unmarried Irish-American woman sixty-seven years old entered the hospital March 17 in coma. The history is limited to a few facts obtained from a brother who did not live with her and from a nurse who brought her in.

For a year or more she had had attacks of dyspnea on exertion and her activity had been limited more or less. A week before admission she became rather suddenly ill with what seemed to be a respiratory infection. She had been in bed. The day before admission she seemed better. The day of admission she became very much worse. Halfway to the hospital she went into coma. There was no definite knowledge of medication except that her doctor gave her two pills containing digitalis early the evening of admission, and that before starting for the hospital she was given a quarter grain of morphia.

Clinical examination showed a woman obviously moribund lying propped up, comatose, breathing with great difficulty. Only a very cursory examination was done. Face and hands intensely cyanotic. Hands clammy. Profuse perspiration. Lungs examined only superficially over the front. In the upper right chest to the level of the fourth rib dullness, bronchovesicular breathing and many moist râles. Apex impulse of the heart not seen or felt. Left border of dullness 11 centimeters to the left of midsternum, fairly marked enlargement to the left. Rate rapid. Action regular. Sounds of fair quality, not muffled. At the apex a to-and-fro murmur, apparently a rub. Sounds at the base obscured by respiration. Pulses weak and thready. Artery walls not palpable. Blood pressure 100/60 to 180/100. Abdomen large, soft, tympanitic. Questionable liver edge palpable. (Nothing felt but a vague resistance.) Extremities cold. No edema. Pupils and knee jerks normal.

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repeated at 11 p.m. and at midnight. Her pulse slowed slightly and became stronger, and she seemed to recognize her brother. Caffein was repeated at 11 p.m. and 1 a.m. The blood pressure fell slightly and the pulse came down to 120 at one o'clock. A little over an hour later her respirations suddenly stopped. Her heart continued to beat for a few moments.

### DISCUSSION

BY RICHARD C CABOT, M D

#### NOTES ON THE HISTORY AND CLINICAL EXAMINATION

We can safely say that neither the digitalis nor the morphia could have caused her condition.

The superficial examination of the lungs showed good judgment.

The to-and-fro murmur tells us why they said the sounds were not muffled. They were thinking about pericardial effusion.

That is an extraordinary swing in blood pressure.

#### DIFFERENTIAL DIAGNOSIS

I do not see anything to consider except pneumonia in a person who is likely to have also a hypertensive type of heart trouble.

The thing that I want to emphasize chiefly about this case is how not to treat a pneumonia, namely to move the patient around. I had this borne in on me, as many of us had, in France. The effect of moving pneumonic patients was that they almost all died. Moving pneumonics is the very worst thing to do. You can move typhoids perfectly well, but pneumonics do much better lying still where they are, even under poor conditions, than after being moved. Even moving a pneumonic patient around in bed does harm. A neighbor of ours in the country had pneumonia. An eminent consultant was called from Boston. He felt of course that he should make a thorough examination. He sat the patient up and did all sorts of things. In two hours the patient was dead. I think it is very important to realize this. Be thorough in your physical examination. But when you know perfectly well from other evidence that a patient has pneumonia it does not make the slightest possible difference how marked or which side the physical signs are. Then physical examination harms the patient.

Perhaps I am wrong. This patient may not have pneumonia. But I do not see what else she has if she has not that. The pericarditis which she has is not enough to kill her. It is a common complication of pneumonia, but I do not feel at all sure about its presence here. So I should say that she is going to have hypertrophy and dilatation of the heart, a pneumonia, I suppose on the right, and I do not know what else.

Ought we to consider tuberculosis here? Noth-

ing is said about emaciation. She does not seem to have had cough any length of time. There is no reason to suspect tuberculosis except for the râles. They are perfectly proper to hear over a pneumonia.

MISS PAINTER. She is recorded as well nourished.

DR CABOT. Should we consider a pulmonary infarct here? I think not. There is nothing here to make us consider it except this pulmonary lesion. So I shall stick to my original guess of pneumonia with hypertrophy and dilatation of the heart and with no evidence of anything else except possibly pericarditis.

A STUDENT. Do you find coma due to a pneumonic process in itself?

DR CABOT. Yes especially in old people. It is very common in them.

A STUDENT. What else could that to-and-fro murmur be?

DR CABOT. They were thinking of the possibility of acute endocarditis. That might give a to-and-fro murmur. I do not know how to rule it out.

A STUDENT. Was the right border of dullness ascertained?

MISS PAINTER. It was not.

DR CABOT. It is difficult with a right-sided pneumonia to find that out.

#### CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Lobar pneumonia

Arteriosclerotic heart disease

#### DR RICHARD C. CABOT'S DIAGNOSIS

Hypertrophy and dilatation of the heart

Pneumonia, probably on the right

#### ANATOMIC DIAGNOSES

##### 1. Primary disease

Arteriosclerotic heart disease. Aortic stenosis.  
Generalized arteriosclerosis.

##### 2. Secondary or terminal lesions

Focal necrosis of liver  
Focal necrosis of spleen

DR TRACY B. MALLORY. This case seems to have been entirely one of arteriosclerosis. The to-and-fro murmur was undoubtedly caused by a marked degree of aortic stenosis which apparently was purely arteriosclerotic in origin. There was no evidence of any rheumatic disease of the heart whatever. There was very marked passive congestion of the lungs, a moderate degree of the spleen, liver and kidneys, and the kidneys showed also a considerable degree of arteriosclerotic nephritis. The head was not examined, so I do not know the cause of the coma.

DR CABOT. Or of her temperature?

DR MALLORY. No.

DR CABOT. Were the lungs all right?

DR MALLORY. Yes.

#### CASE 14192

#### A PERSISTENT BULLOUS ERUPTION

##### DERMATOLOGICAL DEPARTMENT

An American widow seventy-six years old entered the Skin Ward on October 18. The complaint was a generalized itching eruption.

Her first skin trouble was forty years before this time when large blisters broke out on her arms and legs, a few on the face and some inside the nostrils, none in the mouth. She was seen at that time by Dr. J. C. White, who after observing the condition for some time made a definite diagnosis of pemphigus. She entered the Homeopathic Hospital, where she remained three months. She was treated with cocoa butter. Her skin cleared up in about a year and she remained well for twenty-three years. Then the skin broke out again in a similar manner. The lesions in this attack were confined to the legs. She was treated by Dr. John T. Bowen, who also made a diagnosis of pemphigus. The treatment consisted of drying washes. The eruption cleared entirely in a few months.

The present attack had its onset five months before entrance into the hospital. It began with blisters which first appeared on the scalp after a vigorous brushing. From the scalp the eruption spread to the forehead, cheeks, chest, neck, back and legs, with a few lesions on the abdomen. She also had lesions in the mouth. The lesions were blisters, but smaller than in the previous attacks, only a few reaching the size of a five-cent piece. Extreme itching was present in all the attacks.

Her past history reveals that besides her skin trouble she had had whooping cough and dysentery in childhood, occasional bad colds, ruptured appendix six years before admission, with operation and uneventful recovery. She had never had scarlet fever, diphtheria, influenza, malaria or any other illness. She was married soon after the Civil War and had three children, all of whom were now living. Several years ago she had all her teeth extracted on account of pyorrhea. Six months ago she fell, dislocating her left shoulder. She had a good appetite and drank a great deal of water. She had been troubled considerably with gas in the stomach. Her bowels were "unruly", usually either too loose or constipated. She had had piles for many years, with occasional bleeding, never severe. She had never had jaundice. She had urinated two or three times at night for some years. She passed the menopause twenty-six years before admission. She had had no flowing or discharge of any kind since.

Medical examination in brief showed an elderly lady living comfortably in bed. Over the skin of the neck, chest, back and legs were many isolated and grouped vesicles and bullae, together with crusting lesions. Most of these lesions were definitely grouped. The largest lesions were about one centimeter in diameter. The majority

## Case Records of the Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN  
WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY R C CABOT, M D

F M PAINTER, A B, ASSISTANT EDITOR

CASE 14191

COMA

MEDICAL DEPARTMENT

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trauma or pressure as the fingers elbows, knees, buttocks. Lesions also often occur on the tongue and vocal cords. The lesions often leave scars. In erythema multiforme bullosum the bullae are only a part of the eruption as they are mixed with areas of erythema. The bullae also arise as a rule from inflammatory areas of redness and not as in pemphigus from clear skin. Erythema bullosum usually runs a short course of a few weeks only.

The case under discussion seems quite certainly a case of pemphigus vulgaris. The bullae arising from sound skin the mucous membrane lesions the previous attacks diagnosed as pemphigus are all in favor of this diagnosis.

A new method of diagnosing pemphigus has recently been described by Pels in a paper read before the American Dermatological Association at Washington, D C in Mar 1928. Pels worked along the lines of Macht, who has shown that the blood of menstruating women and the blood of pernicious anemia have a retarding effect on the rootlets of certain seedlings. Pels experimented with the blood of patients suffering from various skin diseases. Mixing the blood serum with equal parts of the culture medium on which the seed was to be planted he found that of all the usual skin diseases pemphigus was the only one in which the blood serum had a definite retarding effect on the growth of the seedling rootlets of *Lupinus albus*. Curiously enough the serum of scarlet fever patients had a stimulating effect on the rootlet growth.

The cause of pemphigus is still unknown.

The prognosis of pemphigus should always be guarded. The skin may clear up as it did in the first two attacks in this case but the disease is very apt to recur. The intervals in this case were of extraordinarily long duration. In children the prospect is much better than in adults. Cases having mucous membrane lesions usually do not recover from the disease. In some cases of pemphigus the disease may be active for years without seriously undermining the general health even though most of the skin of the body be involved. The disease seems to be particularly fatal when it occurs in Jewish women.

In the treatment of pemphigus both local and constitutional treatment is indicated. It is generally agreed that arsenic is the most valuable drug, though some deny its worth. It may be given as Fowler's solution, as Asiatic pills or as suggested by Davis of St Louis as iron cacodylate intravenously. He gives one grain three times a week and on alternate days 15 cubic centimeters of coagulin subcutaneously.

Externally, applications of a soothing nature washes, powders, or ointments, may be used. It is best to use whatever the patient finds most comforting, for it is improbable that external applications have any effect on the disease.

#### DIAGNOSIS

Pemphigus vulgaris

of the lesions were vesicles. There were two lesions in the mouth, whitish areas which looked like collapsed vesicles. The bullae arose from clear skin.

Heart sounds of poor quality. Frequent extrasystoles. Radials barely palpable. Blood pressure 150/110. Lungs showed diminished resonance at both apices, with bronchovesicular breathing. Abdomen protuberant. Deep tenderness in right upper quadrant. Linear operation scar in right lower quadrant associated with some diastasis of the muscles, which ballooned out on coughing. Hemorrhoidal tabs about the anus, with some internal hemorrhoids.

The urine showed a faint trace of albumin with hyalin casts at one examination. At all other examinations the urine was negative. Shortly after entrance blood examination showed hemoglobin 90 per cent, with the following differential white cell count: polymorphonuclears 68 per cent, lymphocytes 19 per cent, large mononuclears 7 per cent, eosinophiles 6 per cent.

At times during November she had attacks of extreme weakness. She was seen by Dr. Paul D. White in consultation, his opinion was that she had an arteriosclerotic heart with premature beats, and that perhaps paroxysmal fibrillation or tachycardia might account for the fainting attacks. He suggested six grains of quinidine a day. This was given and she had no more attacks of weakness for two months.

Internal medication for her skin disease consisted of Fowler's solution three drops three times a day after meals, gradually increased to six drops three times a day.

During January, 1925, she failed considerably, the ankles became somewhat swollen and she had considerable dyspnea, relieved somewhat by digitalis. Fowler's solution was omitted. Her blood at this time showed a severe anemia as well as a remarkable leukopenia, hemoglobin 50 per cent, red cells 2,100,000, leukocytes 1400 to 1800, polymorphonuclears 66 per cent, lymphocytes 27 per cent, eosinophils 4 per cent, undetermined 3 per cent. On account of the severe anemia blood transfusion was considered, but was not indicated in the opinion of the medical consultant.

During most of her stay in the hospital new lesions appeared daily, varying in number from one to eight. On February 20 she was discharged unrelieved.

She died on April 14 two months later.

#### DISCUSSION

BY E. LAWRENCE OLIVER, M.D.

The most striking feature of this case is the vesicobullous eruption over a considerable part of the body. Many of the lesions are rather definitely grouped. There are lesions in the mouth. She had had two previous similar attacks, one forty years ago, one seventeen years

ago, both diagnosed as pemphigus by eminent dermatologists.

In the differential diagnosis we may consider pemphigus vulgaris, dermatitis herpetiformis, epidermolysis bullosa, erythema multiforme bullosum.

There are three principal varieties of pemphigus, pemphigus vulgaris, pemphigus foliaceus, pemphigus vegetans. Pemphigus vulgaris, as the name implies, is the commonest type. In this type the lesions consist of bullae, usually developing rapidly without preliminary erythema or areolae. These bullae vary from the size of a pea to that of an egg, and many coalesce to form large lesions of irregular outline. These bullae may rupture in a few hours or days, leaving a moist red surface which heals in a week or two. The eruption may appear on any part of the body, including the mucous membranes, to which in rare cases it may be limited. Mucous membrane lesions usually indicate a severe form of the disease. The subjective symptoms are burning pain or itching. One or all may be present. Constitutional symptoms are often absent even in extensive cases, but in old persons there is apt to be considerable prostration.

Pemphigus foliaceus differs from the above in that the sites of the bullae do not properly heal. Cornification being imperfect, a moist red area remains. Exfoliation is abundant and the decomposition of the cells of the moist surface gives rise to a nauseating odor. The skin often becomes universally involved and the patients gradually lose weight and die from exhaustion or some intercurrent disease.

Pemphigus vegetans is a very rare type in which papillomatous vegetations develop on the moist surfaces left by the broken down bullae. These vegetations occur as a rule in those areas where heat and moisture are present, as about the arms and genitals, the inguinal folds. There are also apt to be severe lesions in the mouth.

Dermatitis herpetiformis is still considered by some authorities to be the same disease as pemphigus. Most dermatologists however believe it to be a distinct entity. This case certainly has features strongly suggesting dermatitis herpetiformis. The grouping as well as the small size of the lesions and the severe itching are more suggestive of dermatitis herpetiformis than they are of pemphigus. The lesions in the mouth however are strong evidence in favor of pemphigus, as the mucous membrane is rarely if ever involved in dermatitis herpetiformis. The vesicles in dermatitis herpetiformis usually arise from an inflamed base. It is admitted that in some cases it is impossible to differentiate between these two diseases.

Epidermolysis bullosa is a rare congenital disease, usually hereditary, which manifests itself by the formation of bullae which occur following slight trauma. The bullae in this disease therefore usually occur on points subject to

trauma or pressure, as the fingers, elbows, knees, buttocks. Lesions also often occur on the tongue and vocal cords. The lesions often leave scars. In erythema multiforme bullosum the bullae are only a part of the eruption as they are mixed with areas of erythema. The bullae also arise as a rule from inflammatory areas of redness and not as in pemphigus from clear skin. Erythema bullosum usually runs a short course of a few weeks only.

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#### DIAGNOSIS

Pemphigus vulgaris



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## A WORD OF CAUTION

THE Public Health Committee of the Massachusetts Medical Society has been doing a valuable piece of work in the last year or so in attempting to determine the merits and demerits of various types of apparatus which are being used for the purpose of insolation or ultraviolet therapy. Much of its investigation has concerned the various types of mercury vapor quartz lamps, it has also caused to be published the results of the Bureau of Standards in testing the efficacy of the well known ultraviolet transparent window glasses which are now on the market.

The mercury vapor quartz lamp is unquestionably a source of powerful ultraviolet emanations, it is also true that in the course of time the tubes in these lamps will deteriorate to such an extent that they are no longer of value for the purpose for which they were intended. When functioning efficiently, on the other hand, these lamps are real and potential sources of danger. The powerful ultraviolet rays must be employed with care or serious burns, comparable in their nature to those produced by sunlight will result, and following a much shorter time of exposure than sunlight requires. It has

been brought out, furthermore, that it is possible that other and more dangerous rays, resembling those emanating from the roentgen ray tube may be produced, and with these a definite, far reaching health hazard may be associated.

The most important results of studies with commercial window glasses which admit the ultraviolet ray has been that certain ones are of little value for this purpose when new, and that others deteriorate so rapidly that they are of practically no value in a year's time. Those which have stood the test of prolonged experimentation are the original and costly quartz glass, and the more practical product of the Corning Glass Company.

The value of pure sunlight in promoting health and in the prevention and treatment of rickets and tuberculosis has long been well known. Recently, however, this knowledge has been the subject of the usual intensive propaganda, to such an extent that we are liable to be converted into a race of sun worshippers. The sun bath is being changed from a valuable therapeutic measure to a universal fad, and the manufacturers of children's clothing are turning this passion for nakedness to their own advantage by devising and selling at a profit clothes which do not clothe—the popular "sun suit."

The "sun suit" is all very well for those who wish to give their children sun baths and follow a new style in clothing at the same time. Our objection to this sartorial fad is that as a result of it numerous children, during the approaching summer, will be broiled to a lobster red, blistered and burned to a crisp by ignorant guardians who have more respect for a stern decree of fashion than they have for the power of a July sun.

The ultraviolet end of the spectrum is as valuable as it is fashionable, but it deserves to be treated with respect in the three coming months. Nature knows how much her children can stand, and has appropriately pigmented those who are destined to walk, naked and unashamed, in the heat of the noonday sun.

## DR. JOHN WHELOCK ELLIOT

It is a pleasure and privilege to publish in this issue of the JOURNAL an Obituary of John Wheelock Elliot by Dr. E. A. Codman. This record is more than an ordinary obituary because it sets forth much of interest pertaining to the progress of surgery in which Dr. Elliot played an important part.

The older men in the profession will enjoy reviewing the important features of the life of one who was known to them as Jack Elliot and students of local surgical history will find a record of his inspiring personality. Probably no one among his confreres knew Dr. Elliot better than did Dr. Codman and the author of this obituary has taken pains to portray the im-

portant characteristics of this lovable gentleman in an entertaining manner

This record should stimulate the friends of those who are participating in the endless procession towards the unknown to record the important details of the lives of those who have contributed to the progress of medicine

### YEAST FAILS TO RISE TO THE OCCASION

THE United States Public Health Service has again taken up the cudgels of science as against rank commercialism and has made an investigation of the food and medicinal qualities of yeast. The results are as might be expected. Yeast can furnish a part of the protein requirements of the body but they can be furnished more palatably and cheaply in other foods. Yeast is rich in vitamin B, but is less palatable and more costly than many other foods which contain the necessary food factor or factors supplied by yeast. Yeast is mildly laxative, hence its heralded value in skin disease and constipation. It has not been shown, however the investigation contends that it is more valuable in this connection than some of our well known green vegetables and fruits.

The consternation, confusion and wailing and gnashing of teeth in the Fleischmann camp can only be imagined

### THIS WEEK'S ISSUE

CONTAINS articles by the following named authors

LUND, FRED B. A.M., M.D. Harvard, 1892 F.A.C.S. Surgeon-in Chief, Carney Hospital Consulting Surgeon, Boston City Hospital and several other hospitals in New England. His subject is "A Case of Diverticulitis of the Fourth Part of the Duodenum" Page 986 Address Carney Hospital, Boston

CRILE G. W. M.A., M.D. Cleveland College of Physicians and Surgeons 1887 LL.D. M.Ch., F.A.C.S., F.R.C.S., D.S.M. Surgeon Cleveland Clinic Hospital. His subject is "New Clinical and Experimental Studies of the Interrelations of the Thyroid Adrenals and the Nervous System" Page 988 Address Cleveland Clinic, Cleveland, Ohio

CODMAN E. A. A.B., M.D. Harvard 1895 F.A.C.S. Member of the Committee on the Registry of Bone Sarcoma of the American College of Surgeons. Formerly Chairman of the Committee on the Standardization of Hospitals, Clinical Congress of Surgeons. His subject is "John Wheelock Elliot" Page 994 Address 227 Beacon Street, Boston

DALAND ERNEST M. A.B. M.D. Harvard, 1918 F.A.C.S. Chief of Staff Pondville Hospital at Norfolk, Surgeon, C. P. Huntington

Memorial Hospital Surgeon to Out-Patients, Massachusetts General Hospital. His subject is 'Use and Abuse of Radium' Page 1005 Address 483 Beacon Street, Boston

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#### SPINAL ANAESTHESIA

It is not much over eighty years since physicians have had the power to remove the dread of pain from surgical procedures. Only recently the daily press has reported the employment of hypnosis as a means of securing this end. That this is not new may be confirmed by consulting the records of the Massachusetts General Hospital where during the hospital service of the late Dr. Morrill Wyman (66 yrs before the 50th anniversary of the discovery of ether) will be found the record of a woman who had a cancer of the breast which she could not bring herself to the point of having removed until she learned of the visit to this country of a celebrated French hypnotist. She entered the Hospital and the surgeons invited him to induce hypnosis in her, which he did, but it had no anaesthetic powers apparently, for the operation had to be abandoned. From time to time modifications of old methods and discovery of new ones have been heralded as epoch making advances and naturally the advocates of the new must point to the failures of the old as the justification for the alleged advance. The training of professional anaesthetists has done much to bring peace to the mind of the operator and something doubtless to the security of the operated. Differentiation of those conditions which are better met by inhalation anaesthesia in some of its forms from those which are best dealt with by local or spinal anaesthesia has marked a decided advance in the art of the anaesthetist. The search for that drug which will produce complete relaxation with safety to any condition with which one may be confronted, with a modicum of disagreeable after-effects and with avoidance of that which constitutes the patient's greatest dread viz. loss of consciousness, is the goal which has been sought. So far all methods, unless the Pitkin method is to prove an exception, have had their limitations. No claims should be considered valid at this time which involve comparisons of mortality statistics as between the Pitkin method and the inhalation methods. In fact it is unlikely that any very satisfactory basis of comparison between any two methods, one of which involves loss of consciousness and the other does not can be found. What one is apt to forget in all such discussions is the fact that any method which is loudly acclaimed is certain to find users who have no more license to resort to the procedure than they have to undertake the surgery to which anaesthesia is a preliminary. The risks of infection can't be denied where the meninges are involved and skin has to be traversed which

harbors organisms in its deeper layers. It is to the class of surgeons above referred to against whom the public must be defended and any improvement in anaesthesia, no matter how valuable, is a menace unless it is "fool proof." Once the fear or loss of consciousness under anaesthesia is removed it is going to be just that much easier for the unscrupulous operator to secure his opportunity to do useless or profitless surgery. This criticism is of course not applicable to surgeons in well organized hospitals where specially trained anaesthetists are available but is quite pertinent under conditions which we all well know exist and it is desirable that emphasis be thrown on the fact that spinal anaesthesia should only be employed where surgery is imperative and in patients in whom the careful administration of *any* form of inhalation anaesthesia is positively contraindicated, otherwise the glamour of a new method is certain to carry even conservative men off their feet. Something of a historical, bibliographical review of the subject of anaesthesia will be on exhibition at the Library during the week of July 8th.

### MISCELLANY

#### ANNUAL REPRINT OF THE REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR 1927

The Council on Pharmacy and Chemistry of the American Medical Association annually publishes the reports which tell the reasons for non-acceptance of those products which during the year it has found unworthy of recognition. Some of these reports have been published in abstract in *THE JOURNAL*, all are contained in full in the volume which is the subject of the present review. The physician who has learned to ask the manufacturer's 'detail' man "If it is not in *New and Nonofficial Remedies*, why is it not?" will find here the answer which that personage will no doubt hesitate to give him. The book shows the practical working out of the principles which the Council's experience has shown to be essential in its fight for rationality in the field of proprietary medicines.

Among the products reported as unacceptable are Bismogenol which is bismuth salicylate under a fancy name Desitin, a complex mixture from Germany Hexol a pine oil preparation for which unwarranted claims are made Warninks Advocaat, a mixture of potassium arsenite and alcohol in the form of an egg nog marketed without emphasis of the arsenic content in a way likely to lead to harmful and ill advised use by the public and Solvo Aspirin another futile attempt to market a solution containing acetylsalicylic acid rendered soluble by addition of sodium bicarbonate.

A glance at the index shows however that these reports do not always deal with articles that have been actually rejected by the Council. Preliminary reports are frequently made on new products which appear promising but for which there is not yet sufficient evidence to warrant inclusion in *New and Nonofficial Remedies*. Included in this group this year are a report on Blueberry Leaf Extract, which

gives promise of being useful in the treatment of diabetes, a report on "Plasmoquin," a substitute for quinine in the treatment of malaria brought out in Germany but thus far withheld from the market by the American agent, a report on "Alpha Lobeline," which has been the subject of many conflicting estimates but which lacks conclusive evidence demonstrating its usefulness, two reports on Ephedrine, announcing standards, evaluating therapeutic usefulness, and finally announcing the acceptability of the drug and of two of its salts, a report on Bismarsen, a new derivative of arsphenamine containing bismuth and proposed for use in the treatment of syphilis.

Of much current interest is the reprint of the report of Dr R. A. Hatcher reviewing the literature on the Gwathmey method of colonic anesthesia and evaluating the present standing and usefulness of this method. This report is an outstanding example of the way in which the Council in addition to its other activities aims to contribute to the advance of general medical knowledge.

Another publication under the title of *New and Nonofficial Remedies*, contained descriptions of the articles which stand accepted by the Council.

This book is the work of a distinguished organization, which some twenty years ago was founded to clean out the Augean stables of proprietary medicines. The Council's plan was and has been the publication annually of a book containing descriptions of those unofficial preparations which after careful investigation have been found worthy of recognition and consideration by the medical profession. Such has been the devotion of the Council members, who serve without remuneration, and such the recognition achieved by their work that today the book describes all the new proprietary products which have a scientific base and which give promise of therapeutic usefulness. The physician who best safeguards his own interests as well as those of his patient will give no consideration to any proprietary medicinal agent which is not listed in *New and Nonofficial Remedies*.

The book is conveniently arranged for reference each preparation is classified, and each classification is preceded by an authoritative and up to date discussion of the composition, actions uses and dosage of the medicament involved. Annually the book is carefully scrutinized and revised to ensure its being in the forefront of medical progress. Products that have been admitted are reexamined at stated intervals to determine if they are keeping their promise of therapeutic usefulness and new products are admitted as they are found acceptable.

Among the more important revisions this year are the rewriting or recasting of the chapters on Medicinal Foods Insulin Arsenic Compounds and Iron and Iron Compounds revision of the chapters on Ovary and Parathyroid to make them conform to the results of recent research and revision of the names and standards of the acriflavine dyes. A noteworthy omission is that of all parathyroid gland preparations designed for oral administration their lack of efficacy by this route having been conclusively demonstrated.

The following are some of the products which have been recognized during the past year and which are now included in the book: Neonol a new barbiturate compound Mesurool a bismuth preparation for use in the treatment of syphilis Bromural, once omitted from the book but now reinstated as a result of the manufacturer's limitation of therapeutic claims.

a number of standardized cod liver oils Ephedrine an alkaloid with epinephrine-like properties and its hydrochloride and sulphate salts Amidoxyl benzoate the ammonium salt of ortholodox benzoic acid proposed for the treatment of arthritis Crotalus Antitoxin an antislakebite serum several brands of erysipelas streptococcus antitoxin and Anaerobic

Antitoxin and antitoxic serum for use against gas gangrene.

On account of the careful revisions and the current additions New and Nonofficial Remedies is essentially a new book each year, indispensable to the physician who would keep up with the march of therapeutic progress

COMPARISON OF DISEASE INCIDENCE IN CONNECTICUT  
WITH 1927 AND SEVEN YEAR AVERAGE  
WEEK ENDING JUNE 9

1928	Wk. ending May 19	Wk. ending May 26	Wk. ending June 2	Wk. ending June 9	Average cases reported for week corresponding to June 9 for past seven years	Wk. ending May 21	Wk. ending May 28	Wk. ending June 4	1927 Wk. ending June 11
Actinomycosis	-	-	-	-	-	-	-	-	1
Anthrax	-	-	-	-	-	-	-	-	-
Botulism	-	-	-	-	-	-	-	-	-
Cerebrospinal Men.	2	2	3	-	1	1	-	-	-
Chickenpox	63	73	55	40	78	141	139	114	123
Conjunctivitis Inf.	-	-	-	-	1	1	-	-	-
Diphtheria	23	26	27	11	31	22	36	26	31
Dysentery, Amoebic	-	-	-	-	-	-	1	-	-
Dysentery, Bacillary	-	-	-	-	-	-	-	-	-
Encephalitis, Epid.	-	-	-	3	1	-	-	1	1
Favus	-	-	-	-	-	-	1	-	-
German Measles	31	29	31	34	16	26	31	8	5
Hookworm Infection	-	-	-	-	-	-	-	-	-
Influenza	46	27	13	2	2	2	1	4	2
Leprosy	-	-	-	-	-	-	-	1	-
Malaria	-	-	-	-	-	-	-	-	1
Measles	279	354	351	340	192	44	57	44	67
Mumps	104	93	76	116	38	43	75	57	37
Paratyphoid Fever	-	-	-	-	-	-	-	-	-
Pneumonia (Broncho)	42	44	26	38	23*	35	26	16	22
Pneumonia (Lobar)	61	68	19	33	22	39	39	20	25
Poliomyelitis	-	-	1	-	-	1	-	-	-
Scarlet Fever	132	78	42	39	54	99	76	68	89
Septic Sore Throat	2	-	-	1	-	-	3	1	5
Smallpox	4	2	1	3	1	-	-	-	-
Tetanus	-	-	-	1	-	-	-	-	-
Trachoma	-	-	-	-	-	-	-	1	-
Trichinosis	-	-	-	-	-	-	-	-	-
Tuberculosis (pul.)	47	24	58	31	34	30	26	17	28
Tuberculosis (o f)	3	3	1	5	3	3	3	3	3
Typhoid Fever	-	1	-	2	3	-	1	-	2
Typhus Fever	-	-	-	-	-	-	1	-	-
Whooping Cough	96	115	108	102	47	14	18	39	13
Gonorrhoea	24	41	13	32	17	36	51	67	24
Syphilis	35	29	17	50	23	26	32	29	29

\*Average for three years. Made reportable January 1, 1925. Remarks No cases of cholera, Asiatic, glanders, plague, rabies in humans and yellow fever during the past seven years.

### WINNERS IN THE HEALTH SCHOLARSHIP CONTEST

Announcement was made today of the winners in the Teachers Health Education Scholarship Contest conducted by the Massachusetts Tuberculosis League. Those to receive prizes were Miss Ethel Standish, Grade 3, Clapp School, Stoughton, Miss Agnes E. Murphy, principal of the Clapp School, Stoughton, and Mr. John P. Sullivan, Washington Irving School, Roslindale. Honorable mention was made to Miss Mary P. Doherty, Grade 2, Franklin School, Malden. The awards to the successful contestants were in the form of scholarships for work in health education in the summer course under Professor C. E. Turner of Technology.

This contest has been open to all classroom teachers in the state. The basis for the awards was made on such vital health points as improvements and gains in the children, a report showing the kind of health teaching and how developed, and the teacher's attitude toward and ability in the field of health education.

Miss Jean V. Latimer of the faculty of the Hyannis State Normal Summer School, Miss Georgie B. Collins, health supervisor in the Malden Public Schools, and Dr. John Ceconi, chairman of the School Committee, served as judges in this contest.

### RECENT DEATHS

**TRIPP**—Dr. G. ALSTON TRIPP, 55, skin specialist and physician of South Worcester, died June 14 at his home, 444 Cambridge Street. For 30 years Dr. Tripp practiced in South Worcester.

Though in ill health for some time, he continued to hold office hours until confined to his bed as a result of a weakened heart.

For over 30 years he practiced from the same office at 477 Cambridge Street.

Since his graduation from the Bowdoin Medical School, he had lived in Worcester, coming to the Worcester City Hospital for his internship and taking a position on this institution's staff following its completion. Up to two years ago he conducted the City Hospital skin clinic and since that date had been a member of the staff as a consultant physician.

Dr. Tripp was born in Embden, Me., Sept. 18, 1872, the son of Richard and Mandana (Lawry) Tripp. He attended the North Anson Academy at North Anson, Me., going to Bowdoin College for his undergraduate studies. Following his graduation he entered the Bowdoin Medical School, was graduated as doctor of medicine and came directly to the Worcester City Hospital. He married Miss Mary Schultz, who survives him.

He also leaves three sons, Alston C., Robert H. and Paul W., a brother Harry of Portland, Me., and two sisters, Susan of Onset, Mass., and Nellie of Madison, Me.

Dr. Tripp was a member of the Practitioners Club of Worcester, of the Worcester District Medical Society and for more than 30 years had been physician for the Whittall Mutual Aid Society of the Whittall Associates.

**WEBBER**—Dr. FREDERICK WARD WEBBER, long a practitioner of Newton, died in that city, June 19, 1928, of pneumonia, at the age of 70.

He was born in Cambridge, Jan. 24, 1858, the son of Dr. Alphonso Carter Webber, a Fellow of the Massachusetts Medical Society, and Lauretta Balcom Webber. He was graduated from Harvard Medical School in 1879, and joined the State Medical Society the following year. He was a Fellow of the American Medical Association, a member of the Cambridge Medical Improvement Association and of the Boston Medical Library. He is survived by his widow, Mrs. Mary Jane Rogers Webber, and by one unmarried daughter.

**BRAYTON**—Dr. ROYALD WALKER BRAYTON, a Fellow of the Massachusetts Medical Society, died at his home in Dorchester, June 20, 1928, at the age of 50.

Dr. Brayton was a graduate of Harvard Medical School in the class of 1900 when he studied abroad in Paris and Heidelberg and then settled in Dorchester in 1903. He was a member of Algonquin Lodge of Masons, the Dorchester Club, Shawmut Club, the Dorchester Medical Society and he was the first president of the Field and Forest Club. He is survived by his widow, a son and two daughters.

**PERCY**—Dr. FREDERICK BOSWORTH PERCY, aged 71, graduate of Yale class of 77, died at his home in Brookline, June 15, 1928, after a long illness.

Dr. Percy was born at Bath, Maine, July 23, 1856, son of David Thomas Percy. He attended the Bath public schools and was graduated A.B. from Yale University and from the Boston University School of Medicine in 1880. He was married to Ada Lieber Livingston Goodsell, June 15, 1881, and she died in 1891. Dr. Percy settled in practice in Dorchester, moving to Brookline early in his career.

From the beginning of his practice until his death he was a member of the faculty of the Boston University School of Medicine, first as professor of materia medica, then as professor of Clinical Medicine and finally as emeritus professor of the latter department. He was for ten years a member of the Brookline school committee and was actively interested in official town affairs. He took an active part in the early movement for State control of tuberculosis. He was a trustee of the State sanatorium at Rutland and a member of the building committee and consultant at Westboro Insane Hospital. Dr. Percy became a member of the Massachusetts Homeopathic Medical Society in 1882. In 1927 he delivered an address on the progress of medicine during the past thirty years before the annual meeting of the Society at Worcester. During the World War he was an active member of the Massachusetts Committee of the National Defense Medical Section. His hearty, whole-souled manner made him a host of friends.

He is survived by a widow, Mrs. Elinor Bellows Wheelock Percy, whom he married on Jan. 31, 1893, a daughter, Mrs. W. W. Duffett, Jr., three sons, Dr. Karlton G. Percy of Chestnut Hill and Boston, a Fellow of the Massachusetts Medical Society, Robert B. Percy of Westboro, Donald B. Percy of New York, and three brothers, Dr. George Percy of Salem, A. A. Percy of Bath, Me., and Dr. D. T. Percy of Arlington.

He was a member of St. Paul's Episcopal Church, Brookline, the University Club, Yale Club, American Institute of Homeopathy and the Massachusetts Homeopathic Medical Society.

## OBITUARIES

### DR. FREDERICK B PERCY

So seldom does the medical profession suffer the loss of a member of the quality of Dr Frederick B Percy that his passing assumes the solemn distinction of a notable event. He exemplified the family medical counsellor at his best. Notwithstanding the disconcerting trend toward pleonastic specialization he steadfastly continued to the end the wise, the friendly the resourceful family physician.

Among the youngest, most beloved and most gifted graduates of Yale, he brought to the practice of his profession in addition to his admirable medical training rare insight, sympathy and personal charm. He early found himself in the midst of an extremely active professional life. Grateful for the unselfish labors of those whose lectures supplied his medical equipment, he in turn assumed the burden of a chair in Boston University School of Medicine. A personable presence, good voice, finished diction and above all a sound and comprehensive knowledge of his subject gave his lectures a dignity which none privileged to sit under them will ever forget.

The art of teaching and the art of medicine are seldom housed within the same brain. Both are gifts for the gracious dispensing of which few individuals are endowed. Dr Percy had these gifts in unusual combination and so employed them as to leave with all who knew him a deep sense of personal obligation.

A. E. P. ROCKWELL

June 20 1928

### BENJAMIN TENNEY

There comes to many a youth a vision which guides him in his training and in the development of those subtle and potentially strong qualities which need only opportunity and persistent application to convert them into working forces for the good of humanity.

In the small community of Thetford Vermont, there was born on October 6 1863 one whose youthful analysis of life directed him in the thought that education was the first step to lead a boy to a point where he could see and measure a future path.

Benjamin Tenney was graduated at Barre Academy Barre, Vermont. He then entered Dartmouth College receiving in 1883 his degree of Bachelor of Arts, and later the degree of Master of Arts. He was expected by his parents to return to pastoral pursuits, but the vision had unfolded to a point of fascination where nothing discouraged the attainment of further knowledge and training. Endowed by inheritance with a mind alert to absorb and brilliant to impart knowledge he came to Boston to increase inadequate funds to allow him to obtain a professional education.

He taught school in Leominster one year and in the Elliot School, North Bennet Street, Boston. He became Head Master of the Boston Evening High School November 8 1892 where he had been an instructor during his medical study and continued as such until December 16 1898.

In 1888 he entered Harvard Medical School where he was graduated in 1892. He was appointed medical interne at the Boston City Hospital for eighteen months. The fine quality of mind which for years had directed the youthful minds in the Evening

School to analyze, to see accurately, to rearrange and draw conclusions had an opportunity to devote his superior teaching ability as an Instructor in Anatomy in the Harvard Medical School from 1893 to 1901 where he became most popular and valued. When the increasing demands of professional work upon his time necessitated his retiring from the field of medical instruction, his pupils devoted to him and impressed with his teaching ability, implored him to accept a small selected group of students to meet regularly around his dining room table to quiz lecture and emphasize important studies in anatomy.

In 1896 Dr Tenney received an appointment to the Medical Staff of the Boston City Hospital to which he devoted his time and thought until 1898 when he resigned that appointment to develop and extend his increasing interest in surgical work.

His extensive knowledge of anatomy and his responsive and alert mind made his progress more rapid than would have been possible for one entering upon this very technical and rapidly growing specialty without the earlier hospital training which has generally been thought to be necessary. Determination was the guiding spirit to accomplishment and he prospered in his new field of activity. As a surgeon he devoted much time in the philanthropic service of the Boston Dispensary. He was largely instrumental in the development of the Berkeley Infirmary and virtually became its most important director and operator, retaining his active interest in that institution and enjoying its constant growth until he was stricken by illness.

Abruptly as by a bolt from a clear sky, when his professional practice was large and remunerative he became aware in November 1926 that he had a possibly incurable ailment. Within twenty-four hours his courage directed him to the only surgical measure which offered any possible hope of relief. It was not many weeks later that it became known that his term of life could be quite accurately measured and he responded with a nobility of Christian spirit and courage that was as instructive and showed his greatness of intellect as in his earlier days as a teacher.

He had a master mind. Men of the generations who knew him will long remember his sterling qualities as a friend a brother a father a counselor. He helped and taught others how to live—his example of supreme Christian character his fortitude in quiet acceptance of the inevitable will of God have taught us how to die and he leaves a cherished memory among his patients and friends that will endure forever.

## CORRESPONDENCE

### NOTES ON NATIONAL AFFAIRS

*From Our Regular Correspondent*

The first session of the Seventieth Congress which convened on December 5 1927 adjourned on May 29 1928. This session had before it about 20,000 bills and resolutions of which somewhat over 900 became laws though most of these are of a private rather than a public nature. This Congress has given more consideration to public health and medical matters than has been the case for several years. All bills not finally acted upon will automatically be before the second session when it convenes next December.

## THE TAX ON NARCOTICS

A proposal in the new revenue act to 'reduce' taxes by raising the tax on physicians under the Harrison Antinarcotic Act from \$1 to \$3 was overwhelmingly defeated, in spite of persistent efforts by Senator Smoot to secure adoption of this increase

## DEDUCTION OF TRAVELING EXPENSES

Although the Senate passed an amendment to the revenue act which would have permitted physicians and sanitarians to deduct from their income tax computations personal expenses incurred in attending professional meetings, the House did not adopt this amendment and it disappeared from the bill during the conference on it.

## VETO FOR PUBLIC HEALTH BILL

The Parker bill (H R 10126) for the coordination of federal health activities was passed by Congress but was vetoed by the President on May 19th. The reasons given for this unexpected action were that this proposed law tended to 'militarize' the Public Health Service and also was unconstitutional in one part. An opinion from the Attorney General was cited to uphold this last contention the argument being that the bill limits the choice of Public Health Service officers appointed by the President to those who pass an examination and are recommended by the Surgeon General. Inasmuch as this system has been in operation, as sanctioned by law since 1889, the Attorney General's opinion seems peculiar at this time.

Observers in Washington and elsewhere seem to think that the influence of Mr H M Lord, Director of the Bureau of the Budget, and possibly that of Senator Smoot, had an effect on the President's action in disapproving this excellent bill.

## ANOTHER VETO OVERRIDDEN

Eight bills were vetoed by the President about the time he disapproved the Parker bill. One of them was the measure providing retirement for disabled emergency officers of the World War, which includes many former medical officers. Congress promptly re-passed this measure along with two others, over the President's veto.

## THE HEALING ART IN THE DISTRICT OF COLUMBIA

The bill to regulate the practice of the healing art in the District of Columbia which has been outlined or mentioned several times in these notes passed the Senate on May 29th and a similar bill has been reported in the House. The Senate adopted an amendment offered by Senator Copeland providing that any chiropractor engaged in practice on January 1 1928, would be licensed after he had made application and proved that he had a diploma from a legally incorporated chiropractic school, and was actually in practice.

## PROGRESS OF OTHER HEALTH MATTERS

Among other new laws of interest to physicians are additional hospitalization for veterans with an appropriation of \$15,000,000 for the purpose government medical and hospital care for retired officers and enlisted men of the Coast Guard, and a measure relative to computing service of officers of the Medical Corps.

A number of bills pertaining to public health were passed by one branch of Congress. Thus, the Senate adopted a measure for an investigation of cancer, and one to regulate the sending of poisons through the mails. Senator Ransdell's bill for a national institute of health was reported to the Senate.

In the House, bills to establish two federal narcotic farms and to grant the pay and allowances of a colonel to the President's physician were passed, while the bill to amend the definition of oleomargarine was reported.

## MEDICAL FACILITIES AT THE CAPITOL

Representative Kindred, who is a physician, has introduced a bill, H R 13854, to provide a room for medical service at the Capitol, with a licensed physician and registered nurse in attendance during the time when Congress is in session. The physician would receive compensation not to exceed \$300 a month, and the nurse not over \$200. This bill was stimulated by the recent death at the Capitol of an elderly Congressman and the fact that suitable therapeutic agents were not available at the time for use by physicians who came to his aid.

## OTHER NEW MEASURES

Among health bills recently introduced in Congress and not previously reported in these notes are H R. 13902 for examinations of the criminally insane, S 4463 for a children's tuberculosis sanatorium in the District of Columbia, S 4478 to prohibit use of public funds for the purchase of butter substitutes for government wards, and H J Res 309 authorizing the President to designate the first week in May of each year as national health week. A resolution was passed by this Congress to designate May first as National Child Health Day.

## AUTOPSY FACTS AS EVIDENCE

The United States Circuit Court of Appeals for the Eighth Circuit has held recently in the case of the Travelers Insurance Company v Bergeron that the facts obtained by a physician at an autopsy are admissible in evidence in a lawsuit. There was no relationship of patient and physician in the making of an autopsy and so the facts discovered do not constitute privileged communications. This case arose in Iowa and the statutes there regarding professional confidence likewise do not apply to autopsies.

## A REPLY TO DR MAURICE FISHBERG'S ARTICLE

## THE TUBERCULOSIS GAME

(*American Mercury* February, 1928 and *Long Island Medical Journal*, May 1928)

Editor, THE NEW ENGLAND JOURNAL OF MEDICINE

Physicians lay tuberculosis workers, and people who are interested in tuberculosis for humane reasons who may have read Dr Maurice Fishberg's article in *The American Mercury* for February 1928 entitled *The Tuberculosis Game* in which he attacks the National and local tuberculosis associations for their Christmas Seal Campaign their publicity method and work in general have perhaps wondered why the officers of those associations or at least those of the principal one—the National Tuberculosis Association—did not reply to the statements made by Dr Fishberg.

The author of this sensational and sarcastic contribution characterizes the work of those societies and committees as unnecessary and the anti-tuberculosis publicity as costly and useless. A "puff" is the dignified term which the learned doctor chooses to apply to the association's methods of anti-tuberculosis publicity and the way they procure the funds to defray the expenses with the aid of the Christmas seal campaign.

I think it was a wise decision on the part of the officers of the National Association to ignore such sensational and totally unfounded accusations as long as they appeared only in a lay periodical which has a more or less popular class of readers. Dr. John B. Hawes 2nd, President of the Boston Tuberculosis Association, nevertheless did reply very tersely to Dr. Fishberg's accusations. Unfortunately this reply appeared only in *The Boston Herald* and in the *Massachusetts Health Journal*. I read Dr. Hawes' reply with great satisfaction for it refutes the unwarranted statements made by Dr. Fishberg in a splendid and a scientific manner.

Now however the May number of the *Long Island Medical Journal* has come out with an exact reproduction of the *Mercury*'s article by Dr. Fishberg and under the same sarcastic title "The Tuberculosis Game." The *Long Island Medical Journal* is almost exclusively read by medical men, and other medical journals naturally take notice of its contents. Thus the editor of one of the most widely read periodicals devoted to hygiene and sanitation has written me asking my opinion on Dr. Fishberg's article and whether there is any truth in or foundation for his derogatory statements. The editor states that he has been advocating the Christmas Seal Campaign in his journal and has freely advertised it heretofore in the December issues. Now however, he wonders if he should do this again and whether Fishberg may not be right after all and if the claims of the various associations for success in the reduction of the morbidity and mortality of tuberculosis are correct and the expenditures for publicity justified.

I have received other inquiries from individuals particularly medical authors asking my opinion on the subject. Perhaps they choose me as a source of information because of my close connection with the National Tuberculosis Association from its inception. Instead of replying individually to the various inquirers I have decided to write a statement for publication in some of the leading medical journals of our country and will feel honored by those which will give my communication the hospitality of their columns. I hope thereby I may be able to clear the atmosphere and at least enable the American physicians who may be concerned to judge whether Fishberg's rather slanderous contribution published in *The American Mercury* and in the *Long Island Medical Journal* entitled "The Tuberculosis Game" has any foundation whatsoever.

When Dr. Fishberg maintains that the National and local tuberculosis associations at the present time only work to prevent infection which exists virtually in every person living in civilized communities he is seriously mistaken. We all believe that a slight tuberculous infection is perhaps immunizing in many instances and that such infection is not to be considered a tuberculous disease or to be feared. On the other hand all medical and social workers in tuberculosis consider it their business to spread the knowledge of the infectious nature of tuberculosis and teach precaution which will

guard the suspect, the predisposed, or the frequently exposed individual from additional infection and the likelihood of developing the disease. This is particularly necessary when concomitant with the suspect's status there exist other pathological conditions tending to develop a mere tuberculous infection into typical tuberculous disease.

Nearly all local tuberculosis associations have long since found it incumbent upon them to pay particular attention to the contributing factors in the development of tuberculosis. The New York Tuberculosis Association has for this reason changed its name to

Tuberculosis and Health Association. It has a cardiac and a dental division working hand in hand with its tuberculosis activities and general health education for adults. Its health work among children consists in country vacations for the undernourished, open air and nutrition classwork, dental hygiene in the schools, care for babies of tuberculous mothers. Mrs. Hermann M. Biggs, one of the New York Association's most active members, has recently published in conjunction with Pearl S. Shackelford, Nutritive Adviser of the New York Tuberculosis and Health Association, a most valuable contribution entitled "Every Child's Dietary for Mothers and Children."

Of course Dr. Fishberg has a right to his own ideas on the principles of contagion and the transmissibility or non-transmissibility of the disease, but from what my own lengthy experience in dealing with the tuberculous has taught me, I thoroughly disagree with him. I believe that the transmissibility of tuberculosis has been amply proved and should be guarded against, that suspects should be watched and prevented from developing tuberculosis, that popular education has been in no small degree responsible for the marvelous reduction in the tuberculosis morbidity and death rate, and that to treat the social aspect of tuberculosis is as essential as the medical prophylaxis and therapy.

One of our greatest sanitary authorities, Dr. Matthias Nicoll Jr., New York State Health Commissioner, the former coworker with and now the successor to the late Hermann M. Biggs, although perhaps with no thought in his mind to reply to Dr. Fishberg's statements concerning the uselessness of teaching sanitary precautions and the little value of public health nurses, has given in *Health News* of the State Department valid reasons for the importance of reporting cases and the examination and re-examination of contact and suspected cases. Dr. Fishberg's slur on the activities of public health nurses, who he says "pester wives of tuberculous husbands to attend clinics for observation or as suspects which they may remain for years," is, to say the least, tactless and uncalled for. Here are, according to the *Health News* of the State Department of April 1928, "Some of the Reasons Why Tuberculosis Should be Reported": why tuberculosis is more frequent among contacts than among non-contacts and why the public health nurse is an invaluable aid to the busy physician treating tuberculous cases.

Reports provide data valuable to both physicians and the public through more efficient public health nursing. Physicians as a rule define the necessary procedures and precautions to prevent the spread of tuberculosis. Most physicians in general practice are too busy to go into the home to teach people the necessary preventive measures. They may tell the people what to do but the public health nurse works



## THE TAX ON NARCOTICS

A proposal in the new revenue act to "reduce" taxes by raising the tax on physicians under the Harrison Antinarcotic Act from \$1 to \$3 was overwhelmingly defeated, in spite of persistent efforts by Senator Smoot to secure adoption of this increase

## DEDUCTION OF TRAVELING EXPENSES

Although the Senate passed an amendment to the revenue act which would have permitted physicians and sanitarians to deduct from their income tax computations personal expenses incurred in attending professional meetings, the House did not adopt this amendment and it disappeared from the bill during the conference on it.

## VETO FOR PUBLIC HEALTH BILL

The Parker bill (H R 10126) for the coordination of federal health activities was passed by Congress, but was vetoed by the President on May 19th. The reasons given for this unexpected action were that this proposed law tended to "militarize the Public Health Service and also was unconstitutional in one part. An opinion from the Attorney General was cited to uphold this last contention the argument being that the bill limits the choice of Public Health Service officers appointed by the President to those who pass an examination and are recommended by the Surgeon General. Inasmuch as this system has been in operation, as sanctioned by law, since 1889, the Attorney General's opinion seems peculiar at this time.

Observers in Washington and elsewhere seem to think that the influence of Mr H M Lord, Director of the Bureau of the Budget, and possibly that of Senator Smoot, had an effect on the President's action in disapproving this excellent bill.

## ANOTHER VETO OVERRIDDEN

Eight bills were vetoed by the President about the time he disapproved the Parker bill. One of them was the measure providing retirement for disabled emergency officers of the World War, which includes many former medical officers. Congress promptly re-passed this measure along with two others over the President's veto.

## THE HEALING ART IN THE DISTRICT OF COLUMBIA

The bill to regulate the practice of the healing art in the District of Columbia which has been outlined or mentioned several times in these notes passed the Senate on May 29th and a similar bill has been reported in the House. The Senate adopted an amendment offered by Senator Copeland providing that any chiropractor engaged in practice on January 1 1928, would be licensed after he had made application and proved that he had a diploma from a legally incorporated chiropractic school, and was actually in practice.

## PROGRESS ON OTHER HEALTH MATTERS

Among other new laws of interest to physicians are additional hospitalization for veterans with an appropriation of \$15,000,000 for the purpose government medical and hospital care for retired officers and enlisted men of the Coast Guard and a measure relative to computing service of officers of the Medical Corps.

A number of bills pertaining to public health were passed by one branch of Congress. Thus, the Senate adopted a measure for an investigation of cancer, and one to regulate the sending of poisons through the mails. Senator Ransdell's bill for a national institute of health was reported to the Senate.

In the House, bills to establish two federal narcotic farms and to grant the pay and allowances of a colonel to the President's physician were passed, while the bill to amend the definition of oleomargarine was reported.

## MEDICAL FACILITIES AT THE CAPITOL

Representative Kindred, who is a physician, has introduced a bill H R 13854, to provide a room for medical service at the Capitol, with a licensed physician and registered nurse in attendance during the time when Congress is in session. The physician would receive compensation not to exceed \$300 a month, and the nurse not over \$200. This bill was stimulated by the recent death at the Capitol of an elderly Congressman and the fact that suitable therapeutic agents were not available at the time for use by physicians who came to his aid.

## OTHER NEW MEASURES

Among health bills recently introduced in Congress and not previously reported in these notes are H R 13902 for examinations of the criminally insane S 4463 for a children's tuberculosis sanatorium in the District of Columbia S 4478 to prohibit use of public funds for the purchase of butter substitutes for government wards and H J Res 309 authorizing the President to designate the first week in May of each year as national health week. A resolution was passed by this Congress to designate May first as National Child Health Day.

## AUTOPSY FACTS AS EVIDENCE

The United States Circuit Court of Appeals for the Eighth Circuit has held recently in the case of the Travelers Insurance Company v Bergeron that the facts obtained by a physician at an autopsy are admissible in evidence in a lawsuit. There was no relationship of patient and physician in the making of an autopsy and so the facts discovered do not constitute privileged communications. This case arose in Iowa and the statutes there regarding professional confidence likewise do not apply to autopsies.

## A REPLY TO DR MAURICE FISHBERG'S ARTICLE

## THE TUBERCULOSIS GAME

(*American Mercury* February 1928 and *Long Island Medical Journal* May 1928)

Editor, THE NEW ENGLAND JOURNAL OF MEDICINE

Physicians, lay tuberculosis workers and people who are interested in tuberculosis for humane reasons who may have read Dr Maurice Fishberg's article in *The American Mercury* for February 1928, entitled *The Tuberculosis Game* in which he attacks the National and local tuberculosis associations for their Christmas Seal Campaign their publicity method, and work in general have perhaps wondered why the officers of those associations, or at least those of the principal one—the National Tuberculosis Association—did not reply to the statements made by Dr Fishberg.

propagation of the disease I venture to say that the majority of clinicians and sanitary authorities agree on the importance of this type of transmission of tuberculosis and on the relative unimportance of possible infection through 'intermediate things' such as clothing telephone receivers door knobs and the rest of the 119 points of contact which Dr Fishberg sarcastically says mentioned above.

In brief that Dr Fishberg should have made this wholesale condemnation of the anti tuberculosis publicity campaign is most regrettable as it has no scientific nor ethical foundation. He is not only unfair to thousands of ethical tuberculosis workers but his statements reflect on his own failure to realize that to combat tuberculosis as a disease of the masses requires educating the masses and that tuberculosis associations all over the civilized world have done and are doing this most successfully. That we are far from having completely mastered tuberculosis is evident for it still afflicts thousands of men women and children while in young women there has even been a relative increase in the morbidity as well as the mortality of late. There is indeed need of much more education.

The Christmas Seal Campaign is a legitimate honest and ethical means to bring about this education and it gives everyone an opportunity to participate in furnishing the means to be helpful in an ultimate victory over the great white plague.

There is one more point which I must mention in conclusion. This is the great influence the anti tuberculosis movement, as carried on by the National and local tuberculosis associations has exerted on nearly all the other health movements in the United States. For the details concerning this I must refer those interested to an article entitled 'The Anti Tuberculosis Crusade as an Inspiration to Modern Health Activities' which appeared about a year ago in the tuberculosis number of *Medical Life* (Vol 33 No 12). Herein was brought together the evidence of the beneficent and invaluable work the various tuberculosis societies and committees have done in aiding indirectly in the combat of the many other diseases of the masses besides tuberculosis.

S ADOLPHUS KNOPF M D

16 West Ninety fifth Street, New York.

#### WHITE ROBED DEVILS'

Mr Editor

The affection felt for the medical profession shown some years ago when the antivaccinationists in this State presented to the Legislature a bill which would prevent any physician from becoming a member of a Board of Health apparently grows more intense as one proceeds westward.

The open door according to the American Association for Medical Progress refers as follows to the use of small quantities of blood in the preparation of a preventive serum for infantile paralysis said blood coming from patients in the Los Angeles Orthopedic Hospital.

By the shades of burned witches and long lost demons by the light of an everlasting hell what does this portend? May we soon expect to meet with white robed devils with vessels and knives that they may force themselves into our very homes and demand the blood of our children and of us as a donation to send hocus pocus serum?"

We can easily imagine our fancy big policeman

standing by to compel by law that we offer up our little tots to this diabolic cult that they may have more blood with which to concoct still more serums perhaps of fatal quality.

Westward the star of empire takes its way

SAMUEL B. WOODWARD

#### ILLNESS CAUSED BY CONTAMINATED FOODS

City of Boston  
Health Department  
City Hall Annex

Boston June 22, 1928

Editor NEW ENGLAND JOURNAL OF MEDICINE

At a recent advertising exhibition in Boston of an electric refrigerator where motion pictures of *paramecia* served to show the people how the activity of pathogenic bacteria was inhibited by refrigeration there also appeared the following exhibit:

Treasury Department  
Bureau of the U S Public Health Service  
Washington September 29 1927

Office of the Surgeon General

Frigidaire Corporation  
Third National Building  
Dayton Ohio

Gentlemen (Attention of Mr E J Huber)

Receipt is acknowledged of your letter of September 21 making inquiry as to the percentage of illness caused by eating food that has been made dangerous by contamination with disease breeding bacteria.

In reply I regret to state that the United States Public Health Service has no statistics on the subject in which you are interested but it is believed that if water and milk are included within the definition of food approximately seventy five per cent of the cases of contagious and communicable diseases are the result of eating food that has been contaminated with disease bearing bacteria.

(Signed) R. C. WILLIAMS

Assistant Surgeon General

It would seem that this statement ought to be interesting to readers of the JOURNAL.

VICTOR SAFFORD

#### KEEP THE RECORD STRAIGHT

Mr Editor

The consuming community (i.e. the consuming public) should pay all cost of production including expenses of the Workmen's Compensation Act, embracing hospital and medical charges. This is logical and just.

Contention that a local industrial community should share in expense is especially unjust when it is considered that these industrial communities are those less able to do so.

A representative of an insurance company recently said: "The mills built and financed hospital of 150 beds. This remark was checked up from the latest report of this hospital. Only 7 1/2% of its endowment fund was received from the industries of the community. None of the larger bequests were made by individuals connected with manufacturing."

ing in cooperation with the family doctor, 'can show them how to do it. These nurses as a rule will visit only cases suggested by the family physician.

"According to some studies, tuberculosis is found about six to nine times as frequently among contacts as among non-contacts. It is therefore obvious that those who are or have been in contact with cases of active tuberculosis should be examined. The nurse visiting reported cases can often use her influence to persuade other members of the family to have a thorough chest examination and thereby aid in the discovery of other cases early, or perhaps in the discovery of the source of infection of the reported cases. Such reports are comparable to a system of bookkeeping. The accurate statistics

- (a) Aid in taking account of stock
- (b) Indicate the magnitude of the problem
- (c) Help to evaluate the work being done and show where to concentrate future efforts
- (d) Indicate the general trend of disease

Records are confidential and, therefore, no harm is done to the patient. Reporting tuberculosis by physicians and institutions is mandatory under section 320 of the Public Health Law.

Dr Fishberg cites the "rarity of tuberculous disease in doctors, nurses and others on the hospital staff of institutions harboring tuberculous patients" as an evidence of the nontransmissibility of this disease. He says that "Experience shows that they are no more liable to develop the disease than persons engaged in other callings and less exposed to infection. And it is not only a fact now with precautions taken against infection, but it was observed long ago, when tuberculosis was not treated as an infectious disease.

The latter statement is incorrect. Those of us who can think, or wish to think a little further back than Dr Fishberg, will recall how frequently tuberculosis was contracted by interns and nurses in general hospitals when the disease was not considered transmissible and no precautions against infection were taken. Why the same class of persons—physicians and nurses—do not contract tuberculosis now days in sanatoria and tuberculosis hospitals is just because the utmost precautions are taken against infection from tuberculous sputum and saliva, and the patients are taught to suppress useless cough. We tell the apprehensive patient that the sanatorium is the safest place for not contracting tuberculosis and the visitors will hear less coughing in such an institution than is often observed in crowded theaters, movies or churches.

Tuberculosis propaganda costs money like any other propaganda. Be it for political or economic purposes or a crusade against cancer, venereal or mental diseases. Enlightening literature, leaflets of instruction, exhibits, etc. cannot be supported on air. Social workers and nurses must be paid. Because tuberculosis is so widespread so universal the maintenance of tuberculosis clinics when not supported by State or municipality, private sanatoria for the poor and those of moderate means, receive aid and support directly or indirectly from the tuberculosis propaganda with the aid of Christmas seals. Dr Fishberg again does an injustice to the cause when he says "Palliative measures such as the building of sanatoria and hospitals for the tuberculous sick, or rendering these unfortunates the financial assistance which they need badly if they are to be cured are rather foreign to the aim of the crusaders.

This work is left to other agencies, to which they give advice whether it is solicited or not."

Having been a humble coworker with those noble men and women physicians and laymen, for over a quarter of a century who pleaded and worked for the establishment of sanatoria, special hospitals, clinics, workshops for employment of arrested cases, committees to aid in the home treatment of the tuberculous, providing needed financial aid to the families when the breadwinner is tuberculous, etc., I know they never have imposed nor do impose their advice or counsel on any group of men or women unless such advice and help is sought. The National Tuberculosis Association has its experts on climate and localization, construction of sanatoria, clinics and workshops, on home treatment, etc. The association is frequently consulted by committees wishing to establish tuberculosis institutions, and by philanthropists desiring to give financial assistance to the tuberculosis cause in one way or another. In many communities it is the National and local tuberculosis associations that are largely responsible for the establishment and maintenance of sanatoria, special hospitals and clinics which have proved and are proving a blessing to thousands of sufferers.

There is not one argument against tuberculosis propaganda or criticism of preventive measures in Dr Fishberg's lengthy article which is not refuted by the daily experience of those engaged in the work. He even contradicts himself in the following statement wherein he says "One eminent medical man who has studied the problem in great detail, and who is not only a laboratory worker but also a practicing physician of high attainments reports that he placed a feeble-minded child in a bed in which a patient with advanced tuberculosis, expectorating rather carelessly myriads of tubercle bacilli, slept for several days—and the child was not infected. The same doctor watched his own children while they were brought up in a large city and had many opportunities to inhale tubercle bacilli and become infected if sputum deposited on clothing could ever prove infection. But his children remained free from this taint until they came into direct contact with a person who coughed and expectorated tubercle bacilli."

Dr Fishberg does not tell us how long the feeble-minded child which might have been immune owing to an infantile infection had remained free from the disease after having been exposed for several days. No conclusion can be drawn from such a statement without the knowledge of many other factors and it is to be hoped that it was not on the strength of this failure to contract the disease that the eminent medical man who had studied the tuberculosis problem a great deal allowed his own children to come in direct contact with a person who coughed and expectorated bacilli. Dr Fishberg calls the leaflets and booklets on the prevention of tuberculosis "piffle" but the perusal of such 'piffle' might have enlightened the 'eminent medical man' on how he could have guarded his own children so that they would have remained free from the tuberculosis taint.

In the final paragraph of his 18-column tirade the author of *The Tuberculosis Game* makes a great deal of the paucity of exact knowledge of tuberculous infection. "Granted that opinions regarding the modus operandi of tuberculosis infection may differ, the fact is established and it is even admitted by Dr Fishberg that direct and prolonged contact with tuberculosis coughers is responsible for the

that is found to be so necessary in this crowded community

Very truly yours  
(Mrs) IDA Z GREEN, *Secretary Pro Tem*  
West End Neighborhood Conference

#### STREET PLAY

The number of children playing in the streets during the summer seasons troubled the community worker to the extent that, in the spring of 1925 she conferred with Mr Young and Miss Murphv of the Department of Physical Education in an effort to remedy the situation. That summer arrangements were made with Mr Young for an experienced playground worker to be designated to the Charlesbank Playground, to cooperate in carrying out the following plan. The West End Jewish Community Center would provide two workers to direct the groups of children to the Charlesbank, where the playground program would be correlated with that of the Center—program to include games both passive and active handicraft health work dancing and free play. The cooperation of the Department of Physical Education having been secured the West End Jewish Community Center was hopeful that the summer season would bring a minimum record of fatalities and a maximum of utility.

The Center workers led the children to the playground in the morning hours and remained with them until the afternoon when they would take them home. Difficulties however arose from the very start. Some of the belated children realizing that the Center worker had already gone to the playground would attempt to cross Charles Street by themselves this constituted a serious menace. Furthermore the children who did come with the Center workers insisted on playing with them and refused to cooperate with the playground workers although the playground and Center workers cooperated to the fullest extent. The expectant harmony among the different groups of children was not obtained. Some of the children during the noon hour would run home without the worker causing a great deal of concern lest they come to some accidental harm. From the point of view of the groups the activities carried on the summer was successful. Approximately 80 boys and 40 girls were benefited through the efforts of the workers.

In the fall of 1925 a conference was held with the Department of Physical Education and the community worker suggested the following for the coming summer that experienced playground workers should again be available that the various school yards in the West End should be opened and equipped for playground purposes and a playground leader provided for each school yard. This would enable the Center workers to conduct several successive groups of children to the various playgrounds. In stead of having to remain with the children on the playground it was thought that once the children were in the hands of the playground worker the interest of the young ones could be retained. Mr Long of the Park Commission was again to be asked permission for the use of the baseball diamond on the Common although the same difficulties of street crossings were being encountered.

In the spring of 1926 a conference was held to prepare for the summer activities. It was decided that South Russell Street, and other playgrounds be opened and equipped as fully as possible to meet the

needs of the district. Playground workers for the approaching season were to be in full charge in their respective playgrounds, leaving the bringing of the children to the playgrounds as the sole responsibility of the Center workers. The Center workers were instructed to reach as many groups of children as possible, by playing with them for a short period of time in the streets, then directing them to the playgrounds, teaching them safety rules at the same time. In the past year we had used, as already mentioned above only the Charlesbank girls and boys playgrounds. This summer, we used as many playgrounds as we had in the community. Through the cooperation of the Department of Physical Education, two other playgrounds were opened and equipped and placed in charge of workers. The season ran from June 28th to September 2nd. Of the 33 streets in the West End the Center workers were able to cover but 20 during the summer. Four hundred and seventeen children were taken to the playgrounds in their vicinity that is 10 to 15 children were daily added to the list of those already attending. Since the children were not remaining on the playground after the workers brought them there another conference was necessary. It was evident that a more careful selection of playground workers was the important factor in this field of work. Miss Murphv made a special effort to secure efficient playground workers resulting in greater cooperation between the playground workers and the Center workers. Street Play work, to us was more or less unique since we had no precedent to follow. It required a forceful aggressive person to capture the interest of the children. It found that playgrounds in and of themselves as well as street play work that was being done, was not enticing enough to hold the children. By way of inducement, picnics were planned weekly. The reward for daily attendance at the playgrounds was an invitation to the picnics. Groups of 30 children at a time were taken for a full day's outing to nearby parks and beaches on these trips.

In the fall of 1926 a conference was held with Dr Wilinsky secretary of the West End Neighborhood Conference. The work done and its possibilities were presented to him with a view to presenting it to the West End Neighborhood Conference. A meeting of the West End Neighborhood Conference was called in the spring of 1927. The community worker presented a report of the work done and the possibilities for the coming summer. A committee on Street Play was appointed as follows: Father Smith chairman, Mrs I Z Green vice-chairman, Miss MacIntyre treasurer and Miss Towne and Miss Prescott members to discuss the ways and means of raising funds for the proposed recreational work. The committee decided that the various agencies and individuals in the community interested in the work, be asked to contribute. Approximately \$300.00 was raised. Two recreational workers were to be employed and were to be on the field beginning July 1st. The community worker outlined the work, then visited the district with the two recreational workers. The West End was divided into two parts: the playground sections North to Leverett Streets the section from Leverett to Nashua Streets running from Brighton Street, through to Norman Pitts and North Margin Streets where there were no playgrounds nor any facilities for play other than one small corner filled with bricks the Minot Street corner of Lowell Street and one small private yard

What would be the response if the municipality or a group of generous individuals were asked, by an industry or an insurance company, to build and equip a plant for the repair of the wood and iron machines used? What response would the working men of the community make to an invitation to work part time without pay, in such a plant?

When logic and justice both point to one solution of a problem, this must be the correct one.

It is the confident belief of many interested parties that those intrusted with the administration of the Workmen's Compensation Law will find the just solution.

The Accident Board have done a difficult piece of work well. The Special Commission of '26-'27 deserved and received commendation for its work and report. The representative of the medical profession on the Special Commission discharged a difficult duty justly and deserves our thanks.

W H MERRILL

#### DR GRAHAM OF THE 'TEMPLE OF HEALTH', AND HIS EARTH BATH EXHIBITION, THE HAY- MARKET

Mr Editor

According to Fitzgerald there is good evidence that Lady Hamilton, the erstwhile Emma Hart may have acted as assistant for a time, before her marriage and elevation to high society, to this famous quack, who had such a vogue in London about 1783.

Fitzgerald in his 'Kings and Queens of an Hour' (Tinsley Bros., London, 1883), gives the following letter from Angelo, the famous fencing master:

'When that rage and curiosity which encouraged Dr Graham about the year 1783 at his temple of health, Pall Mall, began to subside, he imposed on the credulous part of the public with his earth bath exhibition in Pantion St. Haymarket.'

'I was present at one of his evening lectures upon the benefits arising from earth bathing, (as he called it), and in addition to a crowded audience of men, many ladies were there to listen to his delicate lectures. In the centre of the room was a pile of earth in the middle of which was a pit where a stool was placed. We waited some time, when much impatience was manifested and after repeated calls Doctor, Doctor!' he actually made his appearance *en chemise*.'

'After making his bow he seated himself on the stool, when two men with shovels began to place the mould in the cavity as it approached the pit of his stomach he kept lifting up his shirt and at last he took it entirely off, the earth being up to his chin, and the doctor being left in *puis naturalibus*.'

'He then began his lecture expatiating on the excellent qualities of the earth bath. It will perhaps hardly be believed that such an exhibition would have been permitted in what is called an enlightened country, it was however, not only tolerated, but received much encouragement from persons who possessed great influence in the fashionable world.'

Earth baths in 1783, for all the ills that fish is heir to, and violet rays in 1928.

There is no accounting for tastes, as the woman said, when she osculated the bovine proboscis.

Very truly yours

WM PEARCE COUES, M D

May 25th, 1928

#### STATE HEALTH OFFICERS MEET

(From our regular correspondent)

Leprosy, fish tapeworms, trachoma, goiter health of Indians typhoid carriers, and milk were the chief topics discussed at the 43rd annual conference of State and provincial health authorities of North America held at St Paul on June 8th and 9th. This meeting was also combined with the 26th annual conference of the State and territorial health officers with the United States Public Health Service. The health officers of all the New England States, except New Hampshire were present at this meeting.

The difficulties in controlling typhoid carriers were presented in a vivacious manner by the health commissioner of Massachusetts, Dr George H Bigelow, who also contributed profusely and poignantly to the discussion on other subjects particularly goiter and milk.

Following a report by its milk committee in which recent epidemics due to contaminated milk were outlined and the recommendation made that the Standard Ordinance developed by the United States Public Health Service be more widely adopted, the conference passed a resolution drafted by Dr Bigelow, reasserting its confidence in adequate pasteurization as a factor of enormous importance in protecting the most important food product, milk. The conference also recommended that the Inter-state Quarantine Regulations be amended to include certified as well as pasteurized milk to be allowed on interstate rail roads. The Surgeon General signified that this would be done.

Other resolutions adopted by the conference included indorsement of a bill in Congress proposing federal subsidies to the States for rural hygiene activities a resolution expressing sympathy to the State health officer of Louisiana for "undeserved humiliation suffered by him at the hands of the governor, and a resolution urging that detailed reports of cases of tuberculosis be required by health officers, so that thorough registration of cases may be made as a step toward control of the disease.

Dr M Nicoll, Jr State Commissioner of Health of New York was elected president of the conference, and Dr W M Dickie of California was elected vice-president. Dr A J Chesley of Minnesota was re-elected secretary-treasurer. Among the new members elected to the executive committee of which Dr Bigelow is now a member, was Dr B U Richards of Rhode Island. The conference voted to hold its next meeting in Washington, D C.

#### WEST END NEIGHBORHOOD CONFERENCE

June 11, 1928

Editor, THE NEW ENGLAND JOURNAL OF MEDICINE

I am inclosing herewith a copy of the report of the development of Street Play in the West End, from 1925 to the present time which was submitted at the meeting of the West End Neighborhood Conference which was held on Monday June 4, 1928, at 8 o'clock at the Elizabeth Peabody House.

The committee that functioned last year was re-appointed to carry on the work of Street Play this summer—Father Smith chairman Mrs Ida Z Green vice-chairman Miss MacIntyre treasurer Miss Towne of the Bowdoin School and Miss Prescott of the Family Welfare Society. An effort is now being made to raise \$300.00—salary for two recreational workers to carry on this phase of the work.

centive Six boys and girls were chosen each week to wear these badges They took the younger children from the streets to the playground At the end of the week having signed their names to the number of children they had taken to the playground they were enrolled as captains This gave them some responsibility and made them feel important It also entitled them to attend a picnic or outing The captains had to be at the playground every day It was interesting to watch some of these who were problem boys try so hard for the badges An approximate total of 2013 children were reached It would seem to the community worker that Kenard Avenue should be one of the streets considered to be temporarily roped off for street play work, since it is a blind alley and the children could play there in safety

## NOTICES

### THE LASKER FOUNDATION FOR MEDICAL RESEARCH

The University of Chicago has been enriched by the establishment by Albert D and Flora W Lasker, of the Lasker Foundation consisting of \$1,000,000, the net income of which is to be devoted to the promotion of medical education and research at the University It is the wish of the donors that the fund shall be used primarily for research into the causes nature cure and prevention of degenerative diseases

### THE AMERICAN BOARD OF OTOLARYNGOLOGY

An examination was held in Minneapolis Monday June 11th 1928 Forty nine applicants were examined—forty six being granted certificates

The Board will hold an examination in New York City Friday October 12th 1928 and in St Louis Monday October 15th 1928

Those wishing to come before this Board please advise with

Dr W P Wherry Secretary  
1500 Medical Arts Building  
Omaha Nebraska  
H P MOSHER, M D President

### CHANGE OF ADDRESSES

Dr Fred F Weiner has moved from 37 Ellsworth Street Brockton to 98 Moraine Street, Brockton

Dr Charles Sziklas has moved from 31 Massachusetts Avenue, Boston to 270 Commonwealth Avenue Boston

## NOTICE OF MEETING

### INTERSTATE POST GRADUATE MEDICAL ASSOCIATION

The Annual Assembly of the Interstate Post Graduate Medical Association of North America will be held in the City of Atlanta, Ga Oct. 15-19th incl 1928 All medical men in good standing are privileged to register and all are cordially invited to attend

Dr George W Crile Chairman of the Program Committee has arranged an exceedingly attractive program Eighty two renowned clinicians and teachers from all sections of the United States and Can

ada. and from several European countries have definitely accepted places on the program.

A complete program and folder of information will be mailed about four to six weeks in advance of the opening of the assembly to all medical men in good standing as listed in the latest Directory of the American Medical Association

EDWIN HENES JR, M D,  
Executive Secretary

## SOCIETY MEETINGS

October 15-19 — Interstate Post Graduate Association Complete notice elsewhere on this page

December 3-7 — Radiological Society Convention Detailed notice appears on page 712 issue of May 17

## BOOK REVIEWS

*Anthelmintics and their Uses in Medical and Veterinary Practice* By R N CHOPRA M.A., M D and ASA C CHANDLER M.Sc., Ph D The Williams & Wilkins Company Baltimore 1928 291 pages

This volume covers a new field It contains useful information from widely scattered sources The presentation is logical and concise The book is a useful contribution in a neglected field

*Bacteriology and Surgery of Chronic Arthritis and Rheumatism* By H WARREN CROWE

Dr Crowe has succeeded in making his second book more interesting than his first, which was more technical In this volume he goes quite extensively into the classification of arthritis accepting the classification of the Rheumatism Committee in England but adding to the rheumatoid and osteoarthritis the mixed arthritis

In regard to the aetiology he believes that osteoarthritis is invariably due to a streptococcus which inhabits the alimentary tract Rheumatoid arthritis, he finds a staphylococcus of a particular variety which he has called a micrococcus deformans

To quote from his analysis of results in Chapter 7 All persons are carriers of streptococci in their alimentary tract and upper air passages and of staphylococci in the skin and other places Of streptococci there are very great numbers of distinct varieties, whereas staphylococci are more morphologically less varied and serologically closely related to each other He brings out the point which is of a great deal of importance that a person's resistance is very important in the care of arthritis also in the cause If for any reason the resistance is low or is suddenly lowered by shock, chill infection of any kind with these normal inhabitants present in the body they immediately may become the cause of pathological changes in the joints If these two infections are both present in the same individual, he calls the type the mixed type of arthritis

There is a very good chapter on the surgical treatment of arthritis by Herbert Frankling which takes up in a rather concise way the various methods of treatment used by different surgeons with particular warning that the surgery of arthritic joints is oftentimes not a safe procedure The book is worth reading from many angles and gives much material for careful study

on Hale Street (Washington School had destroyed the only play space in this neighborhood) The workers were instructed to speak to the parents and children to inform them of our purpose and who they were, where they were going to take the children, and to promise to bring them back at a certain time. The contacts, in this section, were particularly difficult to make because the mothers, who were mostly Italian, could not understand the purpose, nor were the children very friendly at first. They were accustomed to play in crowds on the sidewalks and in the middle of the streets. It took several days before the recreational workers could make the children understand—some of them could hardly speak English—that our visit was wholly friendly. Another obstacle to be overcome, was, of course, the distance to the playground from that section. The recreational workers would take the children's names, addresses and school attended, etc. Only some of the information was transmitted willingly, they were suspicious. Seeing a worker with a notebook and pencil in hand, many would run away and hide in the doorways. As usual, there were a few children who were willing to supply the needed information and they called it 'belonging'. The workers were instructed if possible, to interest the leaders. In securing the leaders, they were pretty sure of a following of from 6 to 12 in each group. Three hundred-eighty-three children from this section were taken to the playgrounds. The older boys played in the yard on Hale Street where they practiced acrobatic stunts. They were anxious to have the recreational worker see their stunts and many additional ones were taught them by the worker herself. By gaining the confidence of these boys it made it much easier to reach the rest of the children who idolized these stunt performers. It was not very long before the children recognized the recreational workers when they saw them and were willing to walk to the playgrounds with them. Some of the children had to take care of younger sisters and brothers and gave this as their excuse for remaining in the streets. The workers managed to get some of the girls to wheel these babies down to the boys gymnasium in the park. Although the children could not leave the babies they were forming the habit of getting out of the crowded streets and into more pleasant surroundings. On very warm days the workers took the children to the Frog Pond on the Common. This also took them away from the congested streets. Many days it was impossible to reach all the streets and the children complained when the workers did not visit their streets that their mothers had said that they could go that day and as it was they had not gone to the playground.

Those children who did not go to the playground amused themselves by playing and making soap bubbles on their doorsteps. The workers gave these girls cards and paper dolls. The boys who could not get away were given handballs. Had there been a playground near that section more children would have been reached and there would have been a very large attendance. The children would have flocked to it, were it near at hand. The Center worker realized that many children actually did not know that such a thing as a playground existed simply because they had been born and brought up in that section. It was a tragedy to learn that so few of these children actually knew how to play. Their anxiety to learn and their willingness to do what the workers asked was a pathetic revelation.

Another question asked by many of the children was why the workers wanted to give so much of their time to playing with them and teaching them the games. It was surprising how many confidences and friendships were gained in that section, which at first had seemed to be unapproachable.

The section from Myrtle to Leverett Street, having playgrounds, did not present so serious a problem. Children were accustomed to go to these playgrounds. With all that, however, about 1410 children were taken to the playgrounds in that section. The Charles Street crossing presents a most difficult situation. There having been three accidents on Allen Street near Charles Street, the mothers would not permit the children to go to the playground alone. The children were so trained after a while, that they waited for the recreational worker. She would cross the street with them and take them to the playground. The playground workers, whose cooperation we had, seldom began their afternoon activities until our groups had been brought to them. The old problem arose of convincing the mothers that their children would be brought back at a certain hour. Explanations removed this difficulty.

There was an increase in daily attendance at the playgrounds toward the end of August, due to the reopening of the Blackstone School yard. This is the nearest playground for the children from Pitts, Hale and Norman Streets. However, it is open only to children under twelve years of age. What are we going to do with the boys of 14 and 15 years of age, who do not work? They want to play handball in some sections of the school yard, but of course, this is not permitted. It would be an excellent plan if the Wells School yard could be turned into a playground for the older boys and the Blackstone School yard kept for the younger children. The Winchell School playground is very narrow and the children who are not in the swings are, therefore, crowded into a small space. There is another yard alongside that of the Winchell School which would make an ideal playground were swings installed. This would increase the attendance in this particular section. It was too bad that the Phillips School had been closed for repairs during most of the summer. The Bowdoin School playground supplied enjoyment for the younger children mostly. The older boys and girls preferred the Phillips School yard when they could get it. Another difficulty was that the children at the foot of the hill would not walk up to the Bowdoin School playground. The Peter Faneuil playground helped a little but not many of the children lived near it. On rainy days, the playgrounds are closed and the children played out in the rain. It would help tremendously if the children could play indoors. One of the most interesting phases of the work was the talks with the mothers explaining to them the dangers in heavy traffic and what the playgrounds were accomplishing. A chart of accidents occurring daily, was kept and the mothers informed. They knew the menace of the automobile, but it impressed them more to hear the names of the streets on which these accidents occurred. Mothers, whose interest was aroused cooperated to the fullest in helping the plan to send the children to the playgrounds.

The older boys presented a different problem. To get the consent of their mothers meant little. They needed something more. The plan of making boys and girls captains proved very successful. The awarding of safety badges was a most helpful in

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*The Meningiomas Arising from the Olfactory Groove and Their Removal by the Aid of Electro Surgery* By HARVEY CUSHING, CB, DSM, A M, MD Harvard, LL D Cambridge and Glasgow 53 pages, 28 illustrations Jackson, Wylie & Co, Publishers, Glasgow, 1927

This volume contains the MacEwen Memorial Lecture for 1927 as delivered by Professor Cushing at Glasgow University

The first few pages are devoted to the surgical history of Glasgow and the mighty figures in surgery whose voices still echo through the halls of the University These sketches are necessarily brief, but the word pictures are extremely vivid and convincing

The second part of the book, the kernel of the nut, deals with the meningiomas and with their surgical treatment, not with meningiomas in general but with that group of them which arise from the olfactory groove After reading Dr Cushing's description it seems almost impossible to miss one of these tumors, now that he has called the symptom complex to our attention, but their recognition is not as easy as it seems Dr Cushing's experience with the new growths of the brain is enormous and yet he gives us more than a word of warning as to the difficulties of diagnosis It is only as the result of careful work by the neurologist, the ophthalmologist and the psychiatrist that this important, though little known group of brain tumors may be referred to the neurosurgeon while the condition is yet operable

The application of electro-surgical methods to the new growths involving the brain is a long step in the right direction and is the logical outcome of Dr Cushing's insistence on exact and painstaking hemostasis It may seem extraordinary to prolong operative procedures to the extent advocated but we must remember that Dr Cushing has always considered that the time factor in surgery was unimportant

This little volume teaches two lessons—Firstly, the diagnosis of a very definite but little known group of meningeal tumors Secondly, a new application of electrosurgical methods As literature it is worthy of its author It should contain food for thought for the rhinologist and the ophthalmologist as well as for the neurologist and the neurosurgeon

*The New York Academy of Medicine Lectures on Medicine and Surgery* 319 pages, 39 illustrations Paul B Hoeber, Inc, New York, 1928

This volume consists of fifteen lectures given at the New York Academy of Medicine in 1926 and 1927 A wide range of subjects is included, but all the papers are addressed to the general practitioner Most of the articles cover a very broad field and so of necessity have to give a rather superficial sketch

George M MacKee gives an excellent illustrated review of syphilis emphasizing its cutaneous manifestations, and Harlow Brooks discusses the treatment of cardiovascular syphilis

The influence of climate on tuberculosis is presented by J A Miller with an explanation of the climate indicated for various types of the disease

Davia Riesman reviews and discusses the treatment of pneumonia in a thorough, lucid manner The various methods of treatment are explained, including general and special phases, serum, Huntton's antibodies, Felton's antibodies, vaccine quinine, and optochin

Among the other topics considered are intestinal obstruction by J F Erdmann, otological infections by S J Kopetsky, obstetrical problems by J O Polak, surgery of the thyroid by E H Pool and eye conditions by J M Wheeler

The articles as a whole are excellent and are written by real leaders of the profession However, one sometimes questions whether the present tendency to so multiply the number of published volumes of clinics and lectures is truly beneficial to the profession as a whole

#### BOOKS RECEIVED FOR REVIEW

*A Handbook of Clinical Gynecology and Obstetrics* by Rae Thornton La Vake Published by the C V Mosby Company 281 Pages

*Syphilis* by Henry H Hazen Published by the C V Mosby Company 643 Pages

*The Duodenum* by Pierre Duval Published by the C V Mosby Company 212 Pages

*Operative Surgery* by J Shelton Horsley Published by the C V Mosby Company 893 Pages

*Modern Methods of Treatment* by Logan Clendenning Published by the C V Mosby Company 815 Pages

*The Stereoscope in Ophthalmology* by David W Wells Published by the E F Mahady Company 107 Pages

*Clinical Medicine* by Oscar W Bethea. Published by the W B Saunders Company 700 Pages

*Collected Papers of The Mayo Clinic* Edited by Mrs M H Mellish and H Burton Logie Published by the W B Saunders Company 1330 Pages

*Infancy and Human Growth* Edited by Arnold Gesell. Published by the Macmillan Company 418 Pages

*Methods and Problems of Medical Education* Published by the Rockefeller Foundation 386 Pages

*Gynecology* Edited by William P Graves MD Published by W B Saunders Company 1016 Pages

*Addresses on Surgical Subjects* Edited by Sir Berkeley Moynihan Bart Published by W B Saunders Company 348 Pages

*International Clinics* Edited by Henry W Cattell and others Published by the J B Lippincott Company 344 Pages

*Story of Electricity* Edited by Herman Goodman, MD Published by Medical Life Press 62 Pages

*The International Medical Annual* Published by William Wood & Company 574 Pages

*Folklore of the Teeth* by Leo Kanner Published by Macmillan 316 Pages

*The Examination of Patients* by Nellie B Foster Published by W B Saunders Company 392 Pages

*Hay Fever and Asthma* by Ray M Balyeat. Published by the F A. Davis Company 310 Pages

*Eat Drink and Be Healthy* by Clarence W Lieb Published by John Day 180 Pages

*Urinary Analysis and Diagnosis* by Microscopical and Chemical Examination by Louis Heitzmann Published by William Wood & Company 366 Pages

*Nutrition* by Walter H Eddy Published by the Williams & Wilkins Company 237 Pages

*Certified Milk Conferences Held in 1927* 322 Pages

*The Medical Department of the United States Army in the World War Vol IX, Communicable and Other Diseases* Published by the United States Government Printing Co 628 Pages

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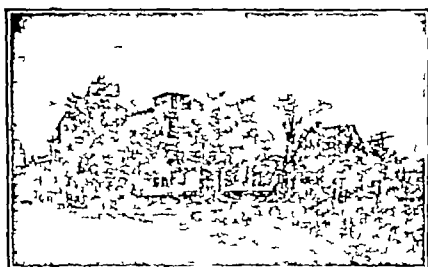
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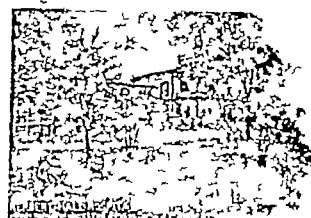
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#### KEY TO ABBREVIATIONS

B R —Book Review  
 C C R —Cabot Case Record  
 C —Correspondence  
 E —Editorial  
 L N —Legislative Notes  
 M M S —Massachusetts Medical Society  
 M N —Meeting Notice  
 M R —Meeting Report  
 Misc —Miscellany

M P —Medical Progress  
 N —Notice  
 N E S S —New England Surgical Society  
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